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ABSTRACT

The purpose of this released exercise set is to provide easy access to released exercises from the National Assessment of Educational Progress (NAEP) third mathematics assessment, conducted in 1981-82. Documentation includes basic reference numbers, objective classifications National Assessment has found useful, timing and administration data for each age group, and scoring guides for open-ended items. Part 1 of the text briefly explains NAEP's assessment procedures and describes the documentation provided for the various kinds of exercises in the set. Part 2 describes rationales behind the development of the attitudinal and experience questions for the 1981-82 mathematics assessment. Part 3 describes the taxonomic and content classifications used to develop and report on cognitive exercises for the 1981-82 mathematics assessment. The remainder of the exercise set consists of copies of released exercises and documentation for each exercise. Attitudinal and experience exercises compose Appendix A, followed by cognitive exercises in Appendix B, and by data for cognitive exercises in Appendix C. (BW)

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ED237546

# NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

## MATHEMATICS

## RELEASED EXERCISES FROM THE 1981-82 ASSESSMENT

13-MA-25

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## FORWARD

When the U.S. Office of Education was chartered in 1867, one charge to its commissioners was to determine the nation's progress in education. The National Assessment of Educational Progress (NAEP) was initiated a century later to address, in a systematic way, that charge.

Each year since 1969, National Assessment has gathered information about levels of educational achievement across the country and reported its findings to the nation. NAEP surveys the education attainments of 9-year-olds, 13-year-olds, 17-year-olds and young adults, ages 26-35, in ten learning areas: art, career and occupational development, citizenship, literature, mathematics, music, reading, science, social studies and writing. Different learning areas are assessed every year, and all areas are periodically reassessed in order to measure possible changes in education achievement. National Assessment has interviewed and tested more than a million young Americans since 1969.

Learning-area assessments evolve from a consensus process. Each assessment is the product of several years of work by a great many educators, scholars and lay persons from all over the nation. Initially, these people design objectives for each subject area, proposing general goals they feel Americans should be achieving in the course of their education. After careful reviews, these objectives are given to exercise (item) writers, whose task it is to create measurement tools appropriate to the objectives.

When the exercises have passed extensive reviews by subject-matter specialists, measurement experts and lay persons, they are administered to probability samples. The people who compose these samples are chosen in such a way that the results of their assessment can be generalized to an entire national population. That is, on the basis of the performance of about 2,000 9-year-olds on a given exercise, we can make generalizations about the probable performance of all 9-year-olds in the nation.

After assessment data have been collected, scored and analyzed, National Assessment publishes reports to disseminate the results as widely as possible. Not all exercises are released for publication. Because NAEP will readminister some of the same exercises in the future to determine whether the performance level of Americans has increased, remained stable or decreased, it is essential that they not be released in order to preserve the integrity of the study.

## INTRODUCTON

The purpose of this released exercise set is to provide easy access to released exercises from the National Assessment of Educational Progress (NAEP) third mathematics assessment, conducted in 1981-82. Exercises and documentation are in loose-leaf format to facilitate sorting and copying. These released exercises are in the public domain; therefore, there are no restrictions on copying or using the exercises in this booklet. Documentation has been kept to a minimum. It includes basic reference numbers, objective classifications National Assessment has found useful, timing and administration data for each age group, and scoring guides for open-ended items.

Detailed achievement data on group performance or changes in performance from previous assessments are not included in this report; they will be published in other reports. Similarly, detailed documentation of the objectives and development process is not included, but is being published concurrently in Mathematics Objectives, 1981-82 Assessment (1981) available from National Assessment.

Exercises were administered to 9-year-olds, 13-year-olds and 17-year-olds.[1] Some exercises were administered to only one age group, others to two or more age groups. The number of released cognitive (knowledge, skills, etc.) and affective (attitudinal) exercises for each age group or combination of age groups is shown in Exhibit 1.

Part 1 of the text briefly explains NAEP's assessment procedures and describes the documentation provided for the various kinds of exercises in the set.

Part 2 describes rationales behind the development of the attitudinal and experience questions for the 1981-82 mathematics assessment. The entire set of attitudinal and experience exercises has been released and is included as Appendix A of this set.

Part 3 describes the taxonomic and content classifications used to develop and report on cognitive exercises for the 1981-82 mathematics assessment (Appendix B). About one-fourth of these exercises have been released. The remainder have not been released because National Assessment will readminister them in the future to determine whether the performance level of young Americans has changed.

The remainder of the exercise set consists of copies of released exercises and documentation for each exercise. Attitudinal and experience exercises compose Appendix A, followed by cognitive exercises in Appendix B, and by data for cognitive exercises in Appendix C.

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[1] During some years National Assessment has administered exercises to supplementary samples of 17-year-olds who were not in school. However, during the 1981-82 assessment, only 17-year-olds enrolled in school were sampled.

EXHIBIT 1. Number of Released Cognitive and Affective Exercises by Age Group or Combination of Age Groups

Cognitive Exercises

| | Calculator Not Used* | | | | Calculator Used* | | | |
|---|---|---|---|---|---|---|---|---|
| | Age 9 | Age 13 | Age 17 | Total | Age 9 | Age 13 | Age 17 | Total |
| Age 9 only | 11 | -- | -- | 11 | 0 | -- | -- | 0 |
| Age 13 only | -- | 7 | -- | 7 | -- | 0 | -- | 0 |
| Age 17 only | -- | -- | 16 | 16 | -- | -- | 0 | 0 |
| Ages 9 and 13 | 9 | 9 | -- | 9 | 0 | 0 | -- | 0 |
| Ages 13 and 17 | -- | 34 | 34 | 34 | -- | 3 | 3 | 3 |
| Ages 9, 13 and 17 | 5 | 5 | 5 | 5 | 1 | 1 | 1 | 1 |
| TOTAL | 25 | 55 | 55 | 82 | 1 | 4 | 4 | 4 |

Affective and Mathematical Experience Exercises

| | Age 9 | Age 13 | Age 17 | Total |
|---|---|---|---|---|
| Age 9 only | 5 | -- | -- | 5 |
| Age 13 only | -- | 2 | -- | 2 |
| Age 17 only | -- | -- | 3 | 3 |
| Ages 9 and 13 | 0 | 0 | -- | 0 |
| Ages 13 and 17 | -- | 5** | 5** | 5 |
| Ages 9, 13 and 17 | 0 | 0 | 0 | 0 |
| TOTAL | 5 | 7 | 8 | 15 |

*Some exercises in one booklet of exercises at each of the ages (9, 13 and 17) was administered using an electronic hand-held calculator. Some of these items were also administered in other booklets without calculators. Hence, the released exercises administered with calculators have been tallied separately.

**This number includes two computer literacy items.

## PART 1

## NAEP ASSESSMENT PROCEDURES

All exercises in this set were administered to at least one of three different age groups of students. Exercises were administered in booklets (packages) containing 29 to 43 exercises. One package for each age level required the use of a hand calculator for some exercises. Exercise packages were accompanied by paced audiotapes. The announcer read the text and response options for most exercises and told respondents when to go on to the next exercise. The total administration time for each package, including introduction, sample exercise and background questions, was about 45 minutes.

Age groups and assessment dates were as follows:

| Age Group | Birthdates | Assessed During |
|---|---|---|
| 13-year-olds | January to December 1968 | October to December 1981 |
| 9-year-olds | January to December 1972 | January to February 1982 |
| 17-year-olds | October 1964 to September 1965 | March to May 1982 |

Each package of exercises was administered to a national sample of from about 1,900 to about 2,100 students; no student took more than one package. About 50 percent of the exercises were multiple-choice with a machine-scorable oval (foil) to the left of each response choice. The remainder of the exercises were open-ended and required the respondent to draw diagrams, graphs points, write a short answer or an equation, perform routine calculations or solve a problem. The scoring guides used to categorize responses for these exercises are included following each open-ended exercise. (Scoring guides are explained toward the end of this chapter.)

Each exercise is reproduced essentially as it was seen by the respondent. It is accompanied by documentation containing information about exercise administration. This information is described in the following example, using as a sample the documentation for Exercise RD90141.

Documentation

| | | | | |
|---|---|---|---|---|
| A. | Release #: | RD90141 | | |
| B. | NAEP #: | 5-A21013-43D-123 | | |
| C. | Content Objective: | Measurement | | |
| | Process Objective: | Skill | | |
| D. | Exercise Type: | Open-ended | | |
| | Stimulus Type: | Text/Tape | | |
| E. | Overlap: | | | |
| | 1981-82 Package-Exercise: | 9<br>05-12 | 13<br>07-03 | 17<br>10-01 |
| F. | Timing: (in seconds) | | | |
| | Exercise Total Time | 9<br>34 | 13<br>35 | 17<br>35 |

A. Release Number

The 1981-82 release number contains seven characters[2] beginning with the letter R and uniquely identifying each exercise. The second character from the left will be a letter from A through F, or the digit zero. The letters refer to the content area to which the exercise refers. Referencing is as follows:[3]

A = Numbers and numeration
B = Variables and relationships
C = Shape, size and position
D = Measurement
E = Probability, statistics, graphs and tables and some computer and calculator items
F = Some technology items

Release numbers with zeros in this position are mathematics experience exercises given to all respondents at the age(s) for whom the exercise was written.

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[2] Exercises that were administered with the electronic hand calculator have an eight character release number. The right-most character in the release number for these exercises is a "K."

[3] There are two exceptions to this referencing scheme: D11711-92D-2 and E80511-92D-23, which are mathematics experience items given only once at the age(s) for which the items were written.

B. NAEP Number

In most cases, part of the NAEP number and the release number for an exercise are identical, except that the release number has an R as the first character. The NAEP number is a unique number assigned to each exercise for documentation and reference purposes. NAEP numbers also contain other numbers that may be useful to the reader.

For example, this exercise has the release number RD90141. The full NAEP number associated with this exercise is 5-A21013-43D-123, where: "5" in the first position indicates that this is a mathematics exercise (as are all the exercises in this booklet); "43D" is an assessment indicator. The assessment indicators used in this booklet are: D1D--1981-1982 exercise used for the first time in 1981-82; 92D--1977-78 exercise used for the second time in 1981-82; and "43D"--1972-73 exercise used for the third time in 1981-82. The last three digits "123" are an age group indicator. The age group indicator shows what age groups responded to the exercise in 1981-82. The values are: 1 = age 9; 2 = age 13 and 3 = age 17. The digits "123" as the age group indicator would show that the exercise was administered to 9-, 13- and 17-year-olds. The age group indicator may be one, two or three digits long.

C. Content Classifications and Objectives

All the exercises administered in the 1981-82 assessment are classified by content area. Most are also classified by process objective. These classifications were used to guide the development of the 1981-82 mathematics assessment. All the exercises from the prior mathematics assessments have been classified by the 1981-82 content area and assessment objective so that they could be reported with the 1981-82 items.

D. Exercise Type and Stimulus Type

Exercises are classified as either multiple-choice or open-ended; this classification is presented as the exercise type. Some exercises have multiple-choice parts and some open-ended parts.

Most exercises have both a text and a tape-recorded stimulus. Some exercises also have additional stimulus materials, such as graphs, tables and pictures, while a few exercises have either only a taped stimulus or only a text stimulus.

E. Package and Exercise Number

Exercises were assembled into packages for administration to each age group. For each group, the 1981-82 package and exercise number is shown. For example, the number "05-12" denotes package 5, exercise 12. There is not, in general, any correspondence between package numbers for various ages. For example, package 7 for age 13 may contain some of the same exercises as package 8 for age 17.

F. Exercise Time

As mentioned, exercise packages were administered by paced audiotapes. For each age group, the total time allowed (in seconds) for an exercise in the 1981-82 assessment is shown. The total time is the time allotted for reading the exercise and for responding to it. Actual tapescripts, showing exactly what was read and how the total time was broken down into reading and responding times, are available from National Assessment. Times given for exercises measuring changes are the 1981-82 assessment times. Unless there is a footnote to the contrary, the 1972-73 and 1977-78 assessment times were identical to those in the 1981-82 assessment.

## Data Included in the Exercise Set

In Appendix A of this volume, estimates of national p-values are reported for each foil of each part of every effective exercise. These data are placed directly on copies of the exercises. To provide room for the data the response ovals (foils) used by the respondents were removed. A column of data labeled "no response" is provided for each exercise part. This data is an estimate of the percentage of respondents who did not respond to the exercise part in question. However, "no response" was not a response option for an exercise.

A few of the exercises in Appendix A have relatively high nonresponse rates. These high nonresponse rates seem to be, at least in part, due to exercise placement within the package.

For exercises given to both ages 13 and 17, the data is presented on two lines. On all these exercises the age 13 data is given on the upper line and the age 17 data on the lower one.

Correct answer estimates of p-values are provided for cognitive items. These estimates are included as Appendix C, which contains data for the nation and modal grade.

Statistics reported and definitions of the selected population groups follow.

## Statistics Used in the Exercise Set

Since National Assessment uses a national probability sample to collect data, the findings are reported as estimates of the percentage of individuals in a given group who would successfully complete a particular exercise if everyone in that group in the country had been tested. Thus, when we say that "85 percent" of the 9-year-olds gave correct responses," 85 percent is an estimate of the proportion of all 9-year-olds in the country who would have answered correctly if all 9-year-olds had been assessed.

These percentages are always subject to sampling error since they are computed from a sample rather than from the entire population. The standard errors of these percentages provide a measure of the sampling variability among all possible samples. The standard error of a sample statistic can be used to construct a confidence interval for the estimate--for example, the interval from two standard errors below to two standard errors above the particular sample value would include the average of all possible values in about 95 percent of the samples.

Standard errors for the p-values contained in Appendix C of this release exercise set can be estimated using a pair of formulas given below. For a simple random sample the standard error of a p-value is

For National Assessment data the following equations should be used to obtain reasonably accurate estimates of the standard errors.

If $30\% \leq P \leq 70\%$ then

$$se_p = \sqrt{\frac{2P(100-P)}{n}}$$

If $P < 30\%$ or $P > 70\%$ then

$$se_p = \frac{32.4}{\sqrt{n}} + \sqrt{\frac{P(100-P)}{2n}}$$

For both equations:

P = weighted percentage

$se_p$ = estimated standard error of the percentage P

n = sample size

The approximate sample sizes for the nation and modal grade are given for each age in Table 1.

TABLE 1

Approximate National and Modal Grade Sample Sizes for the 1981-82 Mathematics Assessment by Age

| | Age 9 | Age 13 | Age 17 |
|---|---|---|---|
| National | 1992 | 1970 | 2040 |
| Modal Grade | 1398 | 1407 | 1511 |

Definitions of Selected Reporting Groups

In addition to results for the nation as a whole, National Assessment reports performance of various groups within the national population. Definitions of the groups reported in this volume follow.

Age

Results are reported for all persons enrolled in public or private schools who were 9, 13 and 17 years old at the time of the assessment.

## Modal Grade

The modal grade is the school grade in which most (70 to 75 percent) students in a specific age group are found. The modal grades for each age group are: age 9--grade 4; age 13--grade 8; and age 17--grade 11.

A state or district that conducts an assessment of grades 4, 8 or 11 and tabulates results separately for students who are 9, 13 or 17 years old (according to National Assessment's age definition) will be able to compare its results to National Assessment's modal-grade results.

## Scoring Guides

Open-ended exercises were scored by specially trained scorers. To help assure consistent scoring, National Assessment developed detailed scoring guides for those exercises. A scoring guide defines acceptable and unacceptable responses for an item. The acceptable and unacceptable categories are usually further subdivided into finer categories to describe common responses or types of responses that are of substantive interest.

A two-digit classification system is used for coding each response.

10-19 = Categories of acceptable responses
20-29 = Categories of unacceptable responses
77 = "I don't know" responses
88 = No response

As part of the quality-control procedures used during the scoring of open-ended exercises administered in the 1981-82 assessment, samples of responses were periodically drawn for multiple scorings. That procedure was developed to monitor scorers' consistency. Each sample of exercise responses was selected randomly and was read and scored by a randomly selected scorer. These scores were recorded on separate forms designed for the quality-control procedure. Later, the sample exercise responses again were scored independently by another scorer, and scores were recorded as usual on the exercise page. These scores were then added to the quality-control forms by another staff worker, and the two category assignments for each response were compared for consistency.

Exhibit 2 displays the average percentage of agreement between the twice-scored quality-control responses. For each released open-ended exercise the percentage of agreement has been averaged across exercise parts and across the multiple readings for each age group to which the exercise was given. The information is arranged in release-number order. NAEP numbers and the age overlaps are also indicated for the exercises. The number of pairs of category assignments included in the computation of the percentage of scorer agreement ranges from about 30 pairs to nearly 400 pairs. When scoring was begun, more samples were used than were used near the end of the scoring process. The average percentages of scorer agreement in Exhibit 2 range from 87.8 percent to 100 percent. Most scorer agreements tended to be greater than 95 percent.

EXHIBIT 2. Average Percentage of Scorer Agreement for Released Open-Ended 1981-82 Mathematics Exercises

| Released Number | NAEP Number | Age Overlap | Age 9 Average Percentage Agreed | Age 13 Average Percentage Agreed | Age 17 Average Percentage Agreed |
|---|---|---|---|---|---|
| RA24031 | A24031 | 23 | ---- | 97.3 | 98.8 |
| RA24431 | A24431 | 23 | ---- | 98.0 | 99.8 |
| RA25432 | A25432 | 1 | 96.9 | ---- | ---- |
| RA25632 | C70009 | 1 | 99.6 | ---- | ---- |
| RA32921 | A32921 | 2 | ---- | 99.4 | ---- |
| RA32921K | A32921K | 123 | 98.3 | 98.8 | 98.4 |
| RA34342 | A34342 | 12 | 99.1 | 100.0 | ---- |
| RA35241 | A35241 | 23 | ---- | 99.4 | 98.5 |
| RA36342 | A36341 | 23 | ---- | 96.4 | 97.9 |
| RA36511 | A36511 | 1 | 99.3 | ---- | ---- |
| RA37111 | A37111 | 1 | 99.7 | ---- | ---- |
| RA44621 | A44621 | 2 | ---- | 97.5 | ---- |
| RA47344 | C50002 | 23 | ---- | 97.6 | 95.8 |
| RA47344K | C50002K | 23 | ---- | 98.1 | 100.0 |
| RA47711 | A47711 | 1 | 98.9 | ---- | ---- |
| RA48221 | A48221 | 2 | ---- | 93.9 | ---- |
| RA48221K | A48221K | 23 | ---- | 96.3 | 99.3 |
| RA52132 | A52132 | 23 | ---- | 96.8 | 95.3 |
| RA70443 | A70443 | 1 | 97.4 | ---- | ---- |
| RA71443 | A71443 | 23 | ---- | 96.2 | 93.8 |
| RA94123 | P00001 | 23 | ---- | 98.1 | 98.3 |
| RB22325 | B22325 | 3 | ---- | ---- | 98.6 |
| RB23025 | H11025 | 23 | ---- | 98.2 | 98.5 |
| RB25142 | B25142 | 3 | ---- | ---- | 97.6 |
| RB25625 | B25625 | 2 | ---- | 97.1 | ---- |
| RC60824 | C60824 | 3 | ---- | ---- | 87.8 |
| RD21722 | E11006 | 1 | 94.4 | ---- | ---- |
| RD30122 | D30122 | 12 | 97.7 | 99.4 | ---- |
| RD40722 | D40722 | 3 | ---- | ---- | 99.3 |
| RD90141 | A21013 | 123 | 98.5 | 99.4 | 99.2 |
| RD91242 | D91242 | 3 | ---- | ---- | 93.5 |
| RD91342 | D91342 | 23 | ---- | 98.2 | 97.2 |
| RD91342K | D91342K | 23 | ---- | 96.3 | 98.6 |
| RD92141 | E15003 | 23 | ---- | 100.0 | 98.3 |

PART 2

AFFECTIVE AND MATHEMATICAL EXPERIENCE EXERCISES FROM THE
1977-78 MATHEMATICS ASSESSMENT
(APPENDIX A)

## Attitudes and Values in Mathematics

Many mathematics educators consider positive attitudes toward mathematics to be an important education outcome. However, in most cases it is inappropriate to make statements about how people should feel or think. Therefore, the affective components of the assessment were designed to be primarily descriptive--to find out what attitudes and values are held, and ultimately, to discover changes in attitudes over time.

The affective or attitudinal mathematics exercises are organized into four categories according to content. These categories are not to be construed as attitudinal scales. They are: mathematics in school, mathematics and oneself, mathematics and society, and mathematics as a discipline. All of the attitude items used by National Assessment in the 1981-82 assessment were also used in the 1977-78 assessment and were released after that assessment. It has been the policy of National Assessment to both release and reassess attitudinal items when the items seemed appropriate across multiple assessments.

### Mathematics in School

Attitudes toward the mathematics encountered in school are covered in the exercises in this category. They include a school subject comparison, a breakdown of classroom activities by frequency of occurrence, students' attitudes toward these activities, and a measure of the frequency of various mathematics content activities.

### Mathematics and Oneself

This category assesses a respondent's perceptions of himself or herself in relationship to mathematics. Anxiety, motivation, self-concept and enjoyment of mathematics are the topics reflected in these exercises.

### Mathematics and Society

This category includes measurement of the value of mathematics. The exercises assess perceptions of attitudes toward the usefulness and importance of mathematics to society and to the individual.

## Mathematics as a Discipline

Here are respondents' views of mathematics as a cumulative or compartmentalized subject or as a fixed or changing subject, and of mathematics as a process, as well as other aspects of the nature of mathematics. There were no exercises in this category deemed appropriate for age 9 respondents.

## Experiences in Mathematics

A set of questions was developed to measure students' experience in mathematics-related activities. These exercises provide information about respondents' experiences with the metric system, electronic hand-held calculators, computers and, for 17-year-olds, about high school mathematics courses.

PART 3

COGNITIVE EXERCISES FROM THE
1977-78 MATHEMATICS
ASSESSMENT[4]
(APPENDIX B)

Early in the development of the materials for the 1981-82 mathematics assessment a matrix for objectives was adopted. The matrix comprised mathematical process and mathematical content.

Mathematical Process

Mathematical Knowledge

The recall and recognition of mathematical ideas expressed in words, symbols or figures is the first subcategory in the mathematical process dimension. It relies, for the most part, on memory processes, and usually does not require more complex mental processes.

Mathematical Skill

Mathematical skill concerns the routine manipulation of mathematical ideas. It relies on the application of standard procedures or algorithms always leading to an answer. Mathematical skill requires the recollection of how to perform an algorithm.

Mathematical Understanding

The explanation and interpretation of mathematical knowledge compose mathematical understanding. Mathematical knowledge can be expressed in words, symbols or figures, while mathematical understanding relies primarily on the process of translating mathematical ideas within or between modes of expression. Mathematical understanding involves the memory process in addition to the processes of associating one item or knowledge with another.

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[4] A more detailed treatment of the objectives and development process for the 1981-82 mathematics assessment is given in Mathematics Objectives, 1981-82 Assessment (see Bibliogrpahy).

### Mathematical Application

Application refers to the use of mathematical knowledge, skill and understanding. It requires use of the memory, algorithmic, translation and judgment processes to solve problems.

## Mathematical Content

The second dimension of the matrix divides the domain of mathematics into five content classifications, each addressed by specific exercises in the assessment. The content classifications are:

### Numbers and Numeration

Whole numbers, integers, rational numbers expressed as common fractions or decimals, percents and real numbers compose numbers and numerations. A major emphasis is on operations with numbers. However, understanding of number concepts and properties and the use of numbers to solve problems are also assessed.

### Variables and Relationships

Variables and relationships include algebraic facts, symbols, definitions, equations, inequalities, functions and formulas. In addition, exponents, coordinate systems and trigonometric functions are included in this category. Exercises that assess operations, understanding and problem solving are included in this classification.

### Shape, Size and Position

School geometry objectives are stressed in this content classification, but the emphasis is not on geometry as a formal deductive system. NAEP used exercises concerning plane and solid figures, properties of some plane figures, basic theorems and relationships such as congruence and similarity, constructions, rotations and symmetry.

### Measurement

Instrument reading, choice of appropriate units, measures of weight, capacity, time, temperature and length are included here. Also covered are concepts of area, volume and precision. Many exercises in this group use metric units or assess knowledge of the metric system of measurement.

Statistics and Probability

Probability and statistics is comprised of collecting data, organizing data with tables, charts and graphs; interpreting data; drawing inferences and making generalizations; using statistics, combinations and prediction of outcomes.

Technology

The impact of new technology on school mathematics is measured in this content area by items assessing the use of the calculator and computer literacy.

* * *

All items except for the attitude and mathematics experience items, have been classified by content objective and by process objective. There may be some disagreement as to the proper classification of some of the exercises; perhaps several exercises could be properly located in more than one matrix cell. These drawbacks not withstanding, it is hoped that the classifications will be of help to users of this set of exercises.

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# APPENDIX A

Released

Affective & Experience

Exercises

With Foil Level

National Data

1981-82

Assessment

How often have you used the metric system of measurement in each of the following?

| No Response | | Never | Seldom | Often | I don't know. |
|---|---|---|---|---|---|
| 0.0 | A. In mathematics classes | 12.2 | 50.8 | 33.8 | 3.2 |
| 0.1 | B. In science classes | 23.2 | 34.2 | 38.7 | 3.9 |
| 0.2 | C. In other classes in school | 45.2 | 40.5 | 8.1 | 6.0 |
| 0.3 | D. Outside of school | 49.1 | 36.3 | 11.7 | 2.6 |

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RD11711

NAEP #: 5-D11711-92D-2

Objective: H. Mathematics Experience

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 13
Package-Exercise: 13-33

TOTAL TIME: (in seconds) 13
35

A. How much do you like or dislike each of these subjects?

| No Response | | Dislike it a lot | Dislike it a little | Undecided | Like it a little | Like it a lot | Never took |
|---|---|---|---|---|---|---|---|
| 0.7 | Science | 8.4 | 14.6 | 4.0 | 46.0 | 25.1 | 1.2 |
| 0.2 | | 9.4 | 16.0 | 5.4 | 46.3 | 22.2 | 0.6 |
| 2.1 | Social Studies | 11.7 | 18.5 | 7.3 | 34.5 | 25.3 | 0.6 |
| 0.7 | | 10.0 | 15.2 | 9.7 | 38.2 | 25.2 | 1.0 |
| 2.4 | Mathematics | 7.3 | 11.2 | 6.8 | 31.0 | 41.2 | 0.2 |
| 0.9 | | 13.5 | 12.8 | 6.8 | 34.2 | 31.2 | 0.2 |
| 2.4 | English | 9.5 | 16.3 | 9.9 | 34.1 | 26.6 | 1.0 |
| 0.5 | | 10.1 | 15.2 | 8.8 | 36.1 | 29.2 | 0.1 |
| 2.9 | Physical Ed. | 5.3 | 5.2 | 5.4 | 17.6 | 58.4 | 6.2 |
| 0.3 | | 6.5 | 5.9 | 5.7 | 24.2 | 55.0 | 2.3 |

B. How easy or hard is each of these subjects?

| | | Very Easy | Easy | Undecided | Hard | Very Hard | Never took |
|---|---|---|---|---|---|---|---|
| 2.2 | Science | 6.4 | 36.7 | 20.6 | 29.0 | 3.9 | 1.2 |
| 0.5 | | 4.3 | 33.6 | 19.3 | 36.4 | 5.4 | 0.9 |
| 1.8 | Social Studies | 7.5 | 40.0 | 16.3 | 27.3 | 6.3 | 0.7 |
| 1.3 | | 10.7 | 42.6 | 16.4 | 22.8 | 5.3 | 0.9 |
| 1.2 | Mathematics | 15.7 | 41.2 | 13.2 | 23.8 | 4.8 | 0.1 |
| 0.2 | | 10.4 | 33.3 | 12.1 | 31.4 | 12.4 | 0.2 |
| 1.2 | English | 13.0 | 41.0 | 17.7 | 20.1 | 6.1 | 0.9 |
| 0.2 | | 11.5 | 42.4 | 14.3 | 23.1 | 8.2 | 0.2 |
| 1.2 | Physical Ed. | 47.3 | 32.0 | 7.8 | 4.1 | 1.0 | 6.5 |
| 0.3 | | 63.2 | 25.3 | 5.8 | 2.3 | 1.0 | 2.1 |

C. How important or unimportant is each of these subjects?

| | | Unimportant | Not very important | Undecided | Important | Very important | Never took |
|---|---|---|---|---|---|---|---|
| 2.1 | Science | 3.2 | 13.4 | 10.1 | 47.8 | 22.3 | 1.1 |
| 0.5 | | 4.7 | 15.2 | 9.1 | 44.5 | 25.8 | 0.2 |
| 1.9 | Social Studies | 3.9 | 14.0 | 11.0 | 45.0 | 22.4 | 0.8 |
| 0.4 | | 4.5 | 16.9 | 11.9 | 49.3 | 16.2 | 0.7 |
| 1.5 | Mathematics | 2.1 | 2.1 | 3.4 | 26.5 | 64.5 | 0.0 |
| 0.7 | | 0.8 | 2.8 | 3.3 | 34.9 | 57.4 | 0.1 |
| 1.7 | English | 2.4 | 5.0 | 5.2 | 32.8 | 52.2 | 0.7 |
| 0.5 | | 1.7 | 3.9 | 5.0 | 29.8 | 59.0 | 0.0 |
| 1.4 | Physical Ed. | 8.7 | 28.5 | 10.9 | 29.1 | 15.9 | 5.5 |
| 0.4 | | 11.2 | 30.6 | 10.8 | 30.8 | 14.4 | 1.7 |

STOP

Report #: RE60351

NAEP #: 5-E60351-92D-23

Objective: G. Attitudes

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: | 13 | 17 |
| Package-Exercise: | 13-01 | 08-01 |
| TOTAL TIME: (in seconds) | 13<br>148 | 17<br>131 |

This exercise asks how you feel about computers. There are no correct answers. The answer choices are "Strongly Disagree," "Disagree," "Undecided," "Agree," or "Strongly Agree." For each part, choose the one response that BEST describes how you feel about the statement. Be sure to fill in one oval in each box.

| No Response | | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| A. Computers dehumanize society by treating everyone as a number. | 0.2 | 12.0 | 24.0 | 41.3 | 17.2 | 5.3 |
| | 0.1 | 7.1 | 34.1 | 26.9 | 25.2 | 6.6 |
| B. The more computers are used, the less privacy a person will have. | 0.3 | 10.7 | 35.1 | 28.1 | 19.7 | 6.0 |
| | 0.2 | 7.8 | 38.6 | 24.3 | 23.9 | 5.1 |
| C. Computers will probably create as many jobs as they eliminate. | 0.3 | 5.3 | 12.6 | 21.0 | 48.7 | 12.0 |
| | 0.2 | 4.7 | 21.3 | 17.5 | 48.2 | 8.1 |
| D. Computers slow down and complicate simple business operations. | 0.4 | 23.6 | 37.8 | 19.7 | 14.2 | 4.3 |
| | 0.2 | 30.2 | 46.8 | 12.2 | 9.0 | 1.6 |
| E. Someday most things will be run by computers. | 0.1 | 2.2 | 3.6 | 12.8 | 51.1 | 20.2 |
| | 0.1 | 1.0 | 4.3 | 7.3 | 54.1 | 33.2 |
| F. A knowledge of computers will help a person get a better job. | 0.0 | 3.3 | 10.2 | 18.2 | 46.8 | 21.4 |
| | 0.2 | 1.5 | 6.4 | 12.4 | 49.9 | 29.7 |
| G. Computers can help make mathematics more interesting. | 0.1 | 2.5 | 6.3 | 17.6 | 48.2 | 25.5 |
| | 0.1 | 2.7 | 7.7 | 21.6 | 52.3 | 15.7 |

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

(Continued)

How do you feel about each of these statements?

| No Response | | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| 0.4 | H. Computers are suited for doing repetitive, monotonous tasks. | 1.9 | 11.4 | 47.7 | 33.2 | 5.5 |
| 0.2 | | 1.8 | 12.8 | 30.7 | 44.0 | 10.5 |
| | I. Computers are programmed to follow precise, specific instructions. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 0.2 | | 1.5 | 2.8 | 7.6 | 64.6 | 23.4 |
| 0.1 | | 0.4 | 2.4 | 6.2 | 63.3 | 27.5 |
| | J. Computers require special languages for people to communicate with them. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 0.1 | | 4.4 | 15.7 | 23.9 | 42.8 | 13.0 |
| 0.1 | | 1.9 | 15.7 | 17.9 | 47.4 | 17.1 |
| | K. Computers have a mind of their own. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 0.1 | | 20.4 | 32.3 | 13.3 | 25.4 | 8.4 |
| 0.1 | | 25.9 | 38.9 | 14.2 | 16.4 | 4.5 |
| | L. Computers make mistakes much of the time. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 0.1 | | 21.5 | 42.7 | 19.0 | 13.2 | 3.5 |
| 0.1 | | 18.2 | 46.1 | 20.8 | 12.7 | 2.1 |
| | M. To work with a computer, a person must be a mathematician. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 0.2 | | 24.4 | 45.1 | 14.4 | 12.6 | 3.3 |
| 0.1 | | 21.2 | 53.0 | 12.3 | 10.9 | 2.6 |
| | N. Computers store instructions and information. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 0.0 | | 0.9 | 2.4 | 5.3 | 57.7 | 33.6 |
| 0.2 | | 0.7 | 1.1 | 3.8 | 55.4 | 38.7 |

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RE60551

NAEP #: 5-E60551-02D-23

Content Objective: F. Technology

Process Objective: Computer Literacy

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: | 13 | 17 |
| Package-Exercise: | 14-03 | 13-02 |
| TOTAL TIME: (in seconds) | 13 | 17 |
| | 151 | 154 |

This exercise asks how you feel about mathematics or mathematics activities. There are no correct answers. The answer choices are "Strongly Disagree," "Disagree," "Undecided," "Agree," or "Strongly Agree." For each part, choose the one response that best describes how you feel about the statement. Be sure to fill in one oval in each box.

| | | | | | | |
|---|---|---|---|---|---|---|
| | A. I am willing to work hard to do well in mathematics. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| No Response | | 0.7 | 2.0 | 5.0 | 56.2 | 35.9 |
| 0.2 | | 1.0 | 5.7 | 13.3 | 58.6 | 21.4 |
| | B. Mathematics is more for girls than for boys. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 0.2 | | 59.1 | 31.2 | 6.2 | 1.8 | 1.4 |
| 0.2 | | 55.0 | 36.3 | 6.6 | 1.1 | 0.7 |
| | C. Learning mathematics is mostly memorizing. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 0.7 | | 5.9 | 30.0 | 17.0 | 38.0 | 8.5 |
| 0.4 | | 9.0 | 32.7 | 11.7 | 39.5 | 6.7 |
| | D. Mathematics is useful in solving everyday problems. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 0.5 | | 2.5 | 9.9 | 10.9 | 45.4 | 30.7 |
| 0.2 | | 2.8 | 11.2 | 10.4 | 50.4 | 24.9 |
| | E. Exploring number patterns plays almost no part in mathematics. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 1.2 | | 19.9 | 46.3 | 22.3 | 8.2 | 2.0 |
| 0.5 | | 20.5 | 47.7 | 22.4 | 6.8 | 2.0 |

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

(Continued)

How do you feel about each of these statements?

| No Response | | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| 0.2 | F. I enjoy mathematics. | 5.9 | 13.3 | 13.2 | 48.3 | 19.2 |
| 0.1 | | 10.4 | 19.9 | 15.6 | 40.2 | 13.8 |
| 0.3 | G. There is always a rule to follow in solving mathematics problems. | 0.4 | 4.2 | 4.7 | 61.7 | 28.7 |
| 0.3 | | 0.7 | 4.7 | 5.1 | 66.0 | 23.2 |
| 0.2 | H. Most of mathematics has practical use. | 1.6 | 4.9 | 11.5 | 60.9 | 21.0 |
| 0.1 | | 1.3 | 10.1 | 10.2 | 62.6 | 15.6 |
| 0.2 | I. Knowing how to solve a problem is as important as getting a solution. | 0.5 | 2.8 | 7.4 | 51.6 | 37.6 |
| 0.3 | | 0.7 | 2.4 | 3.9 | 50.8 | 41.9 |
| 0.1 | J. Doing mathematics requires lots of practice in following rules. | 1.6 | 11.7 | 14.2 | 50.1 | 22.3 |
| 0.3 | | 0.6 | 8.5 | 11.6 | 58.3 | 20.8 |
| 0.2 | K. I can get along well in everyday life without using mathematics. | 40.9 | 42.1 | 9.2 | 5.3 | 2.2 |
| 0.2 | | 29.6 | 44.5 | 12.3 | 11.1 | 2.3 |
| 0.3 | L. Mathematicians work with symbols rather than ideas. | 3.6 | 24.9 | 42.4 | 24.7 | 4.1 |
| 0.2 | | 6.1 | 28.4 | 35.1 | 27.2 | 3.0 |

STOP

DO NOT CONTINUE UNTIL TOLD TO DO SO.

(Continued)

How do you feel about each of these statements?

| No Response | | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| 0.7 | M. Fewer men than women have the logical ability to become mathematicians. | 26.8 | 42.6 | 19.3 | 9.2 | 1.5 |
| 0.2 | | 31.4 | 45.6 | 16.1 | 5.8 | 0.2 |
| 0.7 | N. Knowing why an answer is correct is as important as getting the correct answer. | 1.1 | 3.5 | 6.9 | 58.0 | 29.8 |
| 0.2 | | 1.1 | 2.2 | 4.6 | 54.5 | 37.5 |
| 0.6 | O. Mathematics is made up of unrelated topics. | 10.1 | 42.2 | 32.4 | 13.3 | 1.4 |
| 0.2 | | 12.2 | 49.5 | 26.9 | 10.0 | 1.1 |
| 0.4 | P. I really want to do well in mathematics. | 1.3 | 0.9 | 3.8 | 36.1 | 57.6 |
| 0.2 | | 1.4 | 3.4 | 9.2 | 50.0 | 35.8 |
| 0.5 | Q. My parents really want me to do well in mathematics. | 0.6 | 0.6 | 3.5 | 29.9 | 64.9 |
| 0.2 | | 1.0 | 1.9 | 9.5 | 43.9 | 43.5 |
| 0.5 | R. I feel good when I solve a mathematics problem by myself. | 1.2 | 3.9 | 7.4 | 43.8 | 43.2 |
| 0.2 | | 1.4 | 2.2 | 6.1 | 47.1 | 43.0 |

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Report #: RE61051

NAEP #: 5-E61051-92D-23

Objective: G. Attitudes

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | 13 | 17 |
|---|---|---|
| Overlap: Package-Exercise: | 13-02 | 08-02 |
| TOTAL TIME: (in seconds) | 218 | 202 |

This exercise asks how you feel about mathematics or mathematics activities. There are no correct answers. The answer choices are "Strongly Disagree," "Disagree," "Undecided," "Agree," or "Strongly Agree." For each part, choose the one response that best describes how you feel about the statement. Be sure to fill in one oval in each box.

| No Response | | | | | | |
|---|---|---|---|---|---|---|
| 0.5 | A. I am good at mathematics. | | | | | |
| 0.2 | | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| | | 1.3 | 7.6 | 20.1 | 57.7 | 12.8 |
| | | 2.4 | 13.5 | 26.0 | 47.4 | 10.5 |
| | B. Mathematics helps a person to think logically. | | | | | |
| | | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 1.0 | | 1.0 | 4.6 | 19.2 | 55.8 | 18.4 |
| 0.9 | | 1.1 | 5.6 | 14.1 | 61.2 | 17.1 |
| | C. It is important to know mathematics such as algebra or geometry in order to get a good job. | | | | | |
| | | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 1.1 | | 2.2 | 11.8 | 13.8 | 43.5 | 27.7 |
| 0.4 | | 3.6 | 26.2 | 19.4 | 37.6 | 12.8 |
| | D. It is important to know arithmetic in order to get a good job. | | | | | |
| | | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| 0.8 | | 1.3 | 6.5 | 9.2 | 45.7 | 36.5 |
| 0.5 | | 1.0 | 7.3 | 7.0 | 49.0 | 35.2 |

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

(Continued)

How do you feel about each of these statements?

| No Response | | | | | | |
|---|---|---|---|---|---|---|
| 0.8 | E. I am taking mathematics only because I have to. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| | | 18.6 | 43.6 | 11.7 | 20.4 | 5.0 |
| 0.8 | | 20.0 | 44.8 | 8.9 | 21.5 | 4.0 |
| | F. New discoveries are seldom made in mathematics. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| | | 12.4 | 31.3 | 24.7 | 25.9 | 4.1 |
| 1.5 | | 10.9 | 40.1 | 25.0 | 19.9 | 3.0 |
| 1.0 | | | | | | |
| | G. Mathematics is more for boys than for girls. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| | | 57.7 | 32.6 | 5.7 | 2.3 | 0.9 |
| 0.8 | | 53.0 | 38.5 | 5.5 | 1.9 | 0.5 |
| 0.5 | | | | | | |
| | H. I would like to take more mathematics. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| | | 10.9 | 17.8 | 24.2 | 33.1 | 13.4 |
| 0.7 | | 11.9 | 19.5 | 27.4 | 29.3 | 11.5 |
| 0.4 | | | | | | |
| | I. Creative people usually have trouble with mathematics. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
| | | 17.6 | 37.9 | 30.9 | 10.5 | 2.0 |
| 1.0 | | 16.1 | 44.8 | 28.5 | 8.2 | 1.8 |
| 0.5 | | | | | | |

DO NOT CONTINUE UNTIL TOLD TO DO SO.

(Continued)

How do you feel about each of these statements?

| No Response | | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| | J. Estimating is an important mathematical skill. | | | | | |
| 0.5 | | 1.4 | 7.8 | 16.1 | 63.7 | 10.4 |
| 0.7 | | 1.1 | 8.7 | 16.4 | 64.5 | 8.6 |
| | K. I usually understand what we are talking about in mathematics. | | | | | |
| 0.4 | | 1.4 | 8.5 | 10.4 | 64.2 | 15.1 |
| 0.4 | | 2.3 | 14.8 | 13.7 | 59.4 | 9.4 |
| | L. Trial and error can often be used to solve a mathematics problem. | | | | | |
| 0.7 | | 4.2 | 9.7 | 33.1 | 41.7 | 10.6 |
| 0.3 | | 1.1 | 8.7 | 18.3 | 59.6 | 12.0 |
| | M. A good grade in mathematics is important to me. | | | | | |
| 0.3 | | 0.6 | 1.4 | 1.9 | 36.9 | 59.0 |
| 0.2 | | 0.8 | 4.4 | 6.8 | 51.5 | 36.3 |
| | N. Justifying the mathematical statements a person makes is an extremely important part of mathematics. | | | | | |
| 0.4 | | 1.5 | 5.2 | 30.7 | 49.7 | 12.5 |
| 0.3 | | 0.9 | 3.8 | 25.9 | 55.5 | 13.6 |

STOP

DO NOT CONTINUE UNTIL TOLD TO DO SO

Report #: RE61151

NAEP #: 5-E61151-92D-23

Objective: G. Attitudes

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | 13 | 17 |
|---|---|---|
| Overlap: Package-Exercise: | 14-01 | 09-01 |
| TOTAL TIME: (in seconds) | 172 | 163 |

How do you feel about each of these statements about mathematics? Do you disagree or agree? Fill in one oval for each statement. If you neither agree nor disagree, fill in the middle oval under "Undecided."

| No Response | | | | |
|---|---|---|---|---|
| 0.4 | A. Mathematics is more for boys than for girls. | Disagree 68.3 | Undecided 16.6 | Agree 14.6 |
| 1.3 | B. It is important to know some mathematics in order to get a good job. | Disagree 9.1 | Undecided 10.5 | Agree 79.1 |
| 1.2 | C. I can get along well in everyday life without using mathematics. | Disagree 69.2 | Undecided 15.6 | Agree 14.0 |
| 0.8 | D. I would like to work at a job that lets me use mathematics. | Disagree 19.9 | Undecided 26.0 | Agree 53.3 |
| 0.9 | E. Mathematics is useful in solving problems in everyday life. | Disagree 18.0 | Undecided 17.6 | Agree 63.5 |
| 0.8 | F. Most people do not use mathematics in their jobs. | Disagree 39.7 | Undecided 22.9 | Agree 36.5 |
| 0.5 | G. Mathematics is more for girls than for boys. | Disagree 73.4 | Undecided 17.0 | Agree 9.1 |

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RE61251

NAEP #: 5-E61251-92D-1

Objective: G. Attitudes

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 9
Package-Exercise: 02-01

TOTAL TIME: (in seconds) 9
99

How do you feel about each of these statements about mathematics? Are they true about you, sometimes true about you, or not true about you? Fill in one oval for each statement.

| No Response | | | |
|---|---|---|---|
| 0.9 | A. I usually understand what we are talking about in mathematics. | | |
| | True about me<br>45.1 | Sometimes true about me<br>49.2 | Not true about me<br>4.8 |
| 1.1 | B. I am good at working with numbers. | | |
| | True about me<br>57.3 | Sometimes true about me<br>37.4 | Not true about me<br>4.3 |
| 1.1 | C. Doing mathematics makes me nervous. | | |
| | True about me<br>16.0 | Sometimes true about me<br>34.1 | Not true about me<br>48.8 |
| 1.3 | D. Mathematics is boring for me. | | |
| | True about me<br>13.8 | Sometimes true about me<br>32.1 | Not true about me<br>52.8 |
| 1.3 | E. I am willing to work hard to do well in mathematics. | | |
| | True about me<br>80.4 | Sometimes true about me<br>14.9 | Not true about me<br>3.5 |

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RE61351

NAEP #: 5-E61351-92D-1

Objective: G. Attitudes

Exercise Type: Multiple-choice
Stimulus Type: Text/Type

Overlap: 9
Package-Exercise: 03-01

TOTAL TIME: (in seconds) 9
73

How do you feel about these activities in learning mathematics? First, are they easy for you or are they hard for you? Second, do you like to do them, or don't you like to do them? Finally, are they important, or not important? Fill in one oval <u>on each line</u> that describes your feelings about each activity. If you feel the activity is between the two choices, fill in the oval marked "In between."

| No Response | | | |
|---|---|---|---|
| | A. Learning about money | | |
| 1.5 | Easy<br>62.8 | In between<br>28.2 | Hard<br>7.6 |
| 4.1 | Like<br>68.5 | In between<br>19.4 | Do not like<br>8.1 |
| 3.2 | Important<br>81.2 | In between<br>11.2 | Not important<br>4.4 |
| | B. Doing addition problems | | |
| 1.5 | Easy<br>73.9 | In between<br>16.9 | Hard<br>7.7 |
| 3.9 | Like<br>65.1 | In between<br>20.4 | Do not like<br>10.6 |
| 3.2 | Important<br>77.6 | In between<br>14.2 | Not important<br>4.9 |

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

(Continued)

| No Response | | | |
|---|---|---|---|
| | C. Solving mathematics word problems | | |
| | Easy | In between | Hard |
| 1.2 | 41.3 | 43.0 | 14.5 |
| | Like | In between | Do not like |
| 3.3 | 44.0 | 30.6 | 22.0 |
| | Important | In between | Not important |
| 3.7 | 69.0 | 21.6 | 5.7 |
| | D. Learning multiplication or times tables | | |
| | Easy | In between | Hard |
| 1.3 | 52.3 | 29.3 | 17.1 |
| | Like | In between | Do not like |
| 3.4 | 60.1 | 21.6 | 14.9 |
| | Important | In between | Not important |
| 3.1 | 80.2 | 13.3 | 3.4 |
| | E. Learning how to measure things with a ruler | | |
| | Easy | In between | Hard |
| 0.8 | 64.2 | 25.7 | 9.3 |
| | Like | In between | Do not like |
| 3.1 | 57.2 | 25.7 | 14.0 |
| | Important | In between | Not important |
| 3.1 | 69.3 | 21.0 | 6.6 |

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RE61451

NAEP #: 5-E61451-92D-1

Objective: G. Attitudes

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 9
Package-Exercise: 05-10

TOTAL TIME: (in seconds) 9
160

How do you feel about these activities in learning mathematics? First, do you like them a lot, like them a little, or not like them at all? Second, how much do they help you in learning mathematics? Do they help you a lot, help you a little, or not help you at all? For each activity, fill in one oval on each line that describes how you feel.

| No Response | | | |
|---|---|---|---|
| | A. Taking mathematics tests | | |
| 1.3 | I like it a lot. 50.1 | I like it a little. 35.6 | I do not like it. 13.0 |
| 4.2 | It helps me a lot. 79.0 | It helps me a little. 13.7 | It does not help me. 3.1 |
| | B. Doing mathematics homework | | |
| 1.9 | I like it a lot. 36.4 | I like it a little. 37.2 | I do not like it. 24.5 |
| 4.8 | It helps me a lot. 65.9 | It helps me a little. 25.0 | It does not help me. 4.2 |
| | C. Helping a classmate do mathematics | | |
| 1.8 | I like it a lot. 50.4 | I like it a little. 28.4 | I do not like it. 19.4 |
| 4.7 | It helps me a lot. 35.5 | It helps me a little. 29.9 | It does not help me. 29.9 |
| | D. Playing mathematics games | | |
| 1.3 | I like it a lot. 80.8 | I like it a little. 13.7 | I do not like it. 4.1 |
| 3.9 | It helps me a lot. 66.5 | It helps me a little. 25.0 | It does not help me. 4.5 |

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

(Continued)

How do you feel about these activities in learning mathematics?

| No Response | | | |
|---|---|---|---|
| | E. Listening to the teacher explain a mathematics lesson | | |
| 1.8 | I like it a lot. 45.3 | I like it a little. 39.9 | I do not like it. 13.0 |
| 3.5 | It helps me a lot. 72.8 | It helps me a little. 20.1 | It does not help me. 3.5 |
| | F. Watching the teacher work mathematics problems on the board | | |
| 2.8 | I like it a lot. 51.8 | I like it a little. 35.0 | I do not like it. 10.4 |
| 3.2 | It helps me a lot. 67.1 | It helps me a little. 24.2 | It does not help me. 5.4 |
| | G. Getting individual help from the teacher on your mathematics | | |
| 2.9 | I like it a lot. 55.8 | I like it a little. 31.0 | I do not like it. 10.3 |
| 3.1 | It helps me a lot. 70.0 | It helps me a little. 22.1 | It does not help me. 4.8 |
| | H. Getting help from a classmate on mathematics | | |
| 2.5 | I like it a lot. 35.2 | I like it a little. 35.6 | I do not like it. 26.6 |
| 3.5 | It helps me a lot. 37.3 | It helps me a little. 37.5 | It does not help me. 21.8 |
| | I. Discussing mathematics in class | | |
| 1.8 | I like it a lot. 52.5 | I like it a little. 33.5 | I do not like it. 12.2 |
| 3.7 | It helps me a lot. 61.2 | It helps me a little. 27.6 | It does not help me. 7.5 |

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RE61551

NAEP #: 5-E61551-92D-1

Objective: G. Attitudes

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 9
Package-Exercise: 04-10

TOTAL TIME: (in seconds) 9
200

How often did you do these activities in your high school mathematics courses? Fill in one oval in each box.

| No Response | | | | |
|---|---|---|---|---|
| 0.3 | A. Take mathematics tests | Often 69.8 | Sometimes 27.5 | Never 2.4 |
| 0.4 | B. Do mathematics homework | Often 65.0 | Sometimes 29.2 | Never 5.5 |
| 0.3 | C. Help a classmate do mathematics | Often 14.4 | Sometimes 72.3 | Never 13.0 |
| 0.3 | D. Play mathematics games | Often 3.0 | Sometimes 40.4 | Never 56.2 |
| 0.3 | E. Listen to the teacher explain a mathematics lesson | Often 77.0 | Sometimes 19.1 | Never 3.5 |
| 0.3 | F. Watch the teacher work mathematics problems on the board | Often 78.5 | Sometimes 18.7 | Never 2.5 |

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

(Continued)

How often did you do these activities in your high school mathematics courses?

| No Response | | | | |
|---|---|---|---|---|
| 0.2 | G. Get individual help from the teacher on your mathematics | Often 16.6 | Sometimes 72.1 | Never 11.1 |
| 0.1 | H. Make reports or do projects on mathematics | Often 1.8 | Sometimes 22.2 | Never 75.8 |
| 0.1 | I. Work ahead in your mathematics book | Often 6.6 | Sometimes 42.0 | Never 51.2 |
| 0.1 | J. Do mathematics problems that are not assigned | Often 3.8 | Sometimes 40.0 | Never 56.1 |
| 0.2 | K. Get help in mathematics from a classmate | Often 16.8 | Sometimes 73.6 | Never 9.3 |
| 0.2 | L. Study mathematics topics that aren't in the textbook | Often 3.0 | Sometimes 31.7 | Never 65.1 |
| 0.2 | M. Discuss mathematics in class | Often 50.2 | Sometimes 41.9 | Never 7.7 |

DO NOT CONTINUE UNTIL TOLD TO DO SO.

(Continued)

How often did you do these activities in your high school mathematics courses?

| No Response | | | | |
|---|---|---|---|---|
| 0.1 | N. | Work mathematics problems at the board | | |
| | | Often<br>25.5 | Sometimes<br>63.3 | Never<br>11.1 |
| 0.2 | O. | Work mathematics problems in small groups | | |
| | | Often<br>7.8 | Sometimes<br>55.7 | Never<br>36.3 |
| 0.1 | P. | Work mathematics problems alone | | |
| | | Often<br>81.4 | Sometimes<br>17.2 | Never<br>1.2 |
| 0.1 | Q. | Do mathematics laboratory activities | | |
| | | Often<br>2.3 | Sometimes<br>17.4 | Never<br>80.2 |
| 0.1 | R. | Choose what mathematics you wanted to study | | |
| | | Often<br>20.1 | Sometimes<br>34.4 | Never<br>45.4 |
| 0.1 | S. | Use a mathematics textbook | | |
| | | Often<br>88.2 | Sometimes<br>9.7 | Never<br>2.0 |

STOP

DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RE61951

NAEP #: 5-E61951-92D-3

Objective: G. Attitudes

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 17
Package-Exercise: 07-01

TOTAL TIME: (in seconds) 17
176

| No Response | | | |
|---|---|---|---|
| 0.2 / 0.1 | A. Have you ever studied mathematics through computer instruction? | | |
| | Yes | No | I don't know. |
| | 23.5 / 18.9 | 69.4 / 79.2 | 6.9 / 1.7 |
| 0.2 / 0.1 | B. Do you think computers are useful for teaching mathematics? | | |
| | Yes | No | I don't know. |
| | 73.0 / 76.5 | 15.0 / 11.7 | 11.8 / 11.6 |
| 0.4 / 0.4 | C. Do you have access to a computer terminal in your school for learning mathematics? | | |
| | Yes | No | I don't know. |
| | 22.7 / 49.3 | 52.6 / 30.5 | 24.3 / 19.7 |
| 0.1 / 0.0 | D. 1. Do you know how to program a computer? | | |
| | Yes | No | I don't know. |
| | 19.9 / 21.5 | 73.6 / 75.8 | 6.4 / 2.6 |
| 65.1 / 75.0 | 2. If yes, what programming language do you know? | | |
| | 22.0 / 20.2 | BASIC | |
| | 0.5 / 0.3 | ALGOL | |
| | 1.6 / 0.7 | FORTRAN | |
| | 0.7 / 0.2 | APL | |
| | 10.0 / 3.7 | Other | |

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

(Continued)

E. Do you think computer programming is a good topic to study in a mathematics class?

| No Response | Yes | No | I don't know. |
|---|---|---|---|
| 0.3 | 66.3 | 19.3 | 14.0 |
| 0.2 | 80.7 | 11.6 | 7.5 |

F. Have you ever used a computer to

| | | Yes | No | I don't know. |
|---|---|---|---|---|
| 1.5 | 1. solve a linear programming problem? | 9.7 | 78.2 | 10.6 |
| 0.6 | | 10.2 | 85.6 | 3.6 |
| 0.9 | 2. solve a mathematical problem? | 65.6 | 31.8 | 1.7 |
| 0.7 | | 51.1 | 47.5 | 0.7 |
| 0.9 | 3. play a game? | 80.4 | 17.7 | 1.0 |
| 0.6 | | 80.1 | 18.8 | 0.4 |
| 1.6 | 4. process business, scientific, or social information? | 11.7 | 82.3 | 4.4 |
| 0.7 | | 19.1 | 78.8 | 1.4 |
| 1.2 | 5. perform statistical analysis of data? | 10.0 | 76.8 | 12.0 |
| 0.6 | | 16.1 | 80.9 | 2.4 |

G. Have you ever written a computer program to

| | | Yes | No | I don't know. |
|---|---|---|---|---|
| 1.3 | 1. solve a linear programming problem? | 5.4 | 83.7 | 9.5 |
| 0.5 | | 7.2 | 89.5 | 2.7 |
| 0.8 | 2. solve a mathematical problem? | 39.6 | 54.1 | 5.6 |
| 0.5 | | 24.2 | 73.7 | 1.6 |
| 1.0 | 3. play a game? | 41.7 | 52.3 | 5.0 |
| 0.7 | | 26.3 | 71.1 | 1.8 |
| 1.3 | 4. process business, scientific, or social information? | 7.5 | 86.0 | 5.2 |
| 0.8 | | 10.0 | 87.5 | 1.7 |
| 1.4 | 5. perform statistical analysis of data? | 7.1 | 81.5 | 10.1 |
| 0.5 | | 10.1 | 87.3 | 2.1 |

DO NOT CONTINUE UNTIL TOLD TO DO SO

Report #: RE80511

NAEP #: 5-E80511-92D-23

Content Objective: F. Technology

Process Objective: Computer Literacy

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

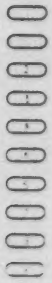
| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 14-02 | 17 / 13-01 |
| TOTAL TIME: (in seconds) | 13 / 143 | 17 / 163 |

**BACKGROUND QUESTIONS--This exercise was included in every package for intended use as a background variable.**

For each of the following questions, fill in one oval in each box.

| | | | | | |
|---|---|---|---|---|---|
| No Response | A. The metric system uses units like centimeters, liters and kilograms. Have you used the metric system of measurement? | | | | |
| 0.4 | | Yes | No | I don't know. | |
| | | 62.5 | 25.0 | 12.1 | |
| | B. How often have you used the metric system in mathematics? | | | | |
| | | Often | Sometimes | Never | I don't know. |
| 0.8 | | 17.8 | 50.9 | 21.6 | 9.0 |
| | C. How often have you used a hand calculator? | | | | |
| | | Often | Sometimes | Never | I don't know. |
| 0.5 | | 27.4 | 42.4 | 23.3 | 2.4 |
| | D. Do you or your family own a hand calculator? | | | | |
| | | Yes | No | I don't know. | |
| 0.6 | | 82.7 | 13.8 | 2.8 | |
| | E. Does your school have hand calculators that you can use in mathematics class? | | | | |
| | | Yes | No | I don't know. | |
| 0.3 | | 9.6 | 82.2 | 7.8 | |

This exercise was not developed to be a direct measure of the math objectives



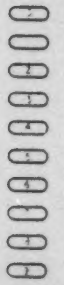
DO NOT CONTINUE UNTIL TOLD TO DO SO.

**BACKGROUND QUESTIONS--This exercise was included in every package for intended use as a background variable.**

Which of the following mathematics courses have you studied? Fill in one oval on each line. (If you have not studied a particular course, fill in the oval under "Not Studied".)

| No Response | | | Studied 1 school year | Studied ½ school year | Studied less than ½ year | Not studied | I don't know. |
|---|---|---|---|---|---|---|---|
| 1.5 | A. | General, Business or Consumer Mathematics | 42.6 | 7.4 | 2.5 | 43.5 | 2.5 |
| 1.8 | B. | Introduction to Algebra (Pre-Algebra) | 37.7 | 6.6 | 5.9 | 46.0 | 1.9 |
| 1.1 | C. | 1st year Algebra | 66.4 | 4.5 | 1.5 | 26.0 | 0.5 |
| 3.1 | D. | 2nd year Algebra | 31.0 | 7.4 | 1.2 | 56.5 | 0.8 |
| 1.7 | E. | Geometry | 46.2 | 5.6 | 3.1 | 42.8 | 0.7 |
| 3.7 | F. | Trigonometry | 7.4 | 6.4 | 4.7 | 76.9 | 0.9 |
| 4.1 | G. | Probability & Statistics | 1.7 | 2.3 | 5.9 | 83.1 | 3.0 |
| 3.1 | H. | Computer Programming | 4.7 | 5.0 | 4.4 | 81.8 | 0.9 |
| 3.3 | I. | Pre-Calculus/ Calculus | 2.7 | 1.5 | 1.1 | 89.9 | 1.6 |

This exercise was not developed to be a direct measure of the Math Objectives.



DO NOT CONTINUE UNTIL TOLD TO DO SO.

**BACKGROUND QUESTIONS--This exercise was included in every package for intended use as a background variable.**

For each of the following questions, fill in one oval in each box.

A. The metric system of measurement uses units like centimeters, liters, and kilograms. How often have you used the metric system?

| No Response | Often | Seldom | Never | I don't know. |
|---|---|---|---|---|
| 0.3 | 30.7 | 58.4 | 7.5 | 3.1 |

B. How often do you use a hand calculator?

| No Response | Almost Daily | A few times a week | Less than once a week | Once a month | Never | I don't know. |
|---|---|---|---|---|---|---|
| 0.3 | 6.4 | 19.4 | 21.0 | 25.3 | 23.0 | 4.4 |

C. Does your school provide hand calculators for use in mathematics class?

| No Response | Yes | No | I don't know. |
|---|---|---|---|
| 0.4 | 7.4 | 88.3 | 4.5 |

This exercise was not developed to be a direct measure of the Math Objectives.



STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

BACKGROUND QUESTIONS--This exercise was included in every package for intended use as a background variable.

For each of the following questions, fill in one oval in each box.

| No Response | |
|---|---|
| 0.4 | A. The metric system of measurement uses units like centimeters, liters, and kilograms. How often have you used the metric system of measurement?<br>Often 19.1 · Seldom 61.8 · Never 16.9 · I don't know. 1.8 |
| 0.3 | B. How often do you use a hand calculator?<br>Almost Daily 19.2 · A few times a week 24.8 · Less than once a week 18.0 · Once a month 20.1 · Never 14.9 · I don't know. 2.6 |
| 0.3 | C. Does your school provide hand calculators for use in mathematics classes?<br>Yes 10.3 · No 83.3 · I don't know. 6.1 |
| 0.3 | D. Does your school provide hand calculators for use in other classes?<br>Yes 16.0 · No 72.4 · I don't know. 11.3 |

This exercise was not developed to be a direct measure of the Math Objectives.

DO NOT CONTINUE UNTIL TOLD TO DO SO.

APPENDIX B

Released

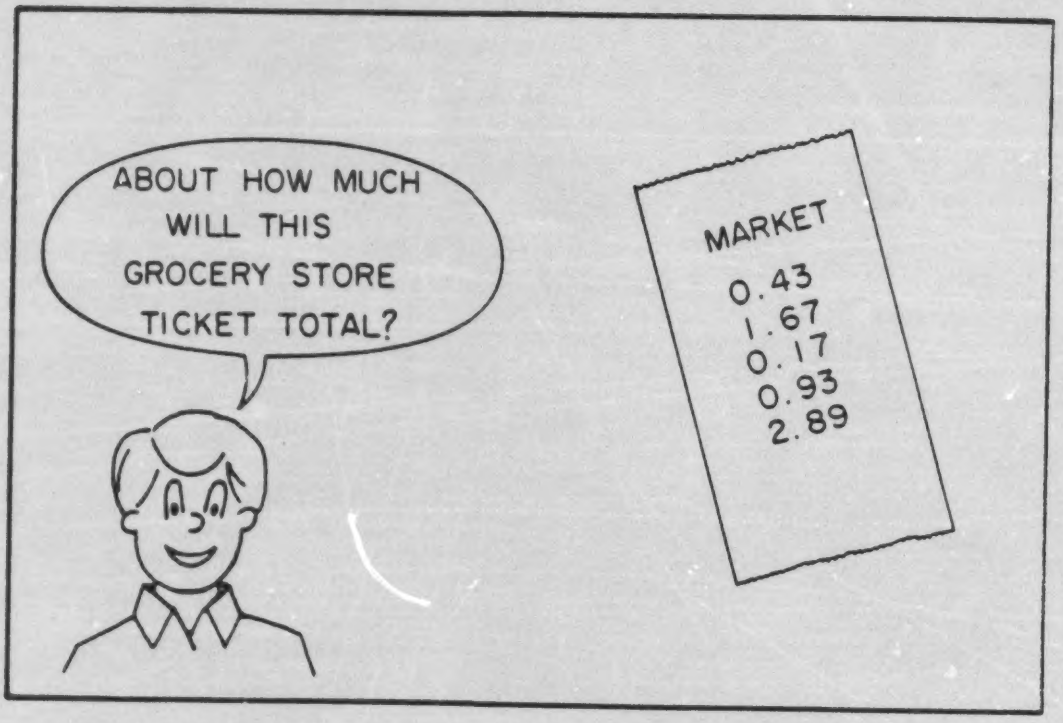
Cognitive Exercises

With

Scoring Guides

1981-82

Assessment




- ⬭ Between $3 and $4
- ⬬ Between $6 and $7
- ⬭ Between $9 and $10
- ⬭ Between $12 and $15

- ⬭ I don't know.

DO NOT CONTINUE UNTIL TOLD TO DO SO.

58

Report #: RA00944

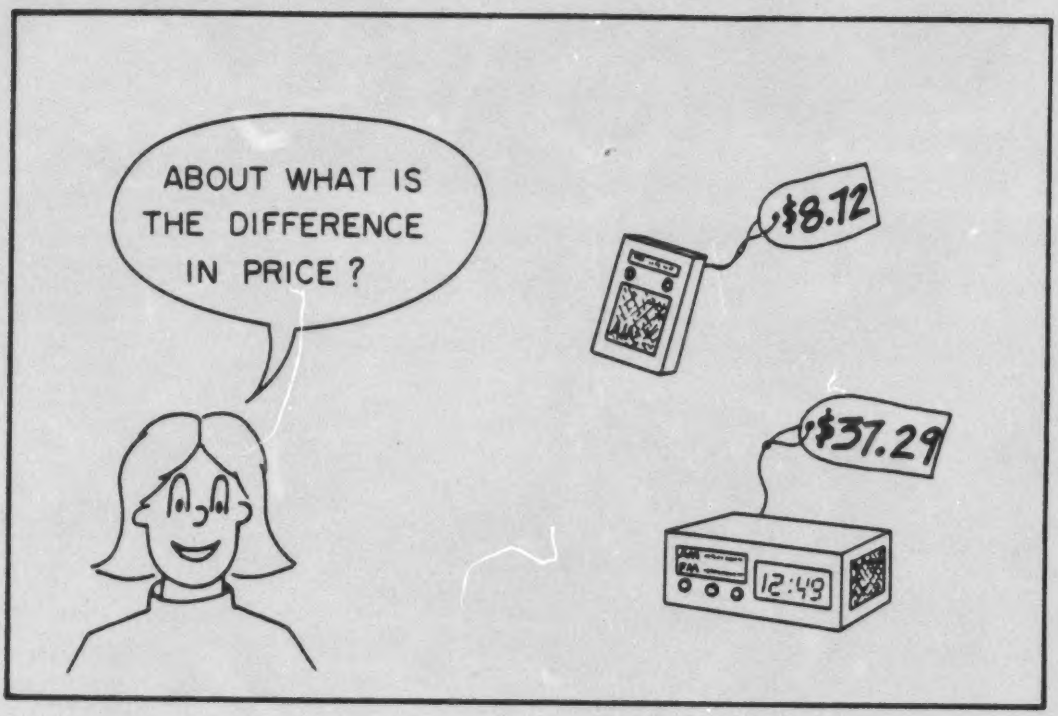
NAEP #: 5-A00944-D1D-23

Content Objective: A. Number and Numeration

Process Objective: Applications of Estimation

Exercise Type: Multiple-choice
Stimulus Type: Text

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 11-14 | 17 / 14-14 |
| TOTAL TIME: (in seconds) | 13 / 14 | 17 / 14 |




- ● $29
- ○ $31
- ○ $45
- ○ $46

- ○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

60

Report #: RA01144

NAEP #: 5-A01144-D1D-23

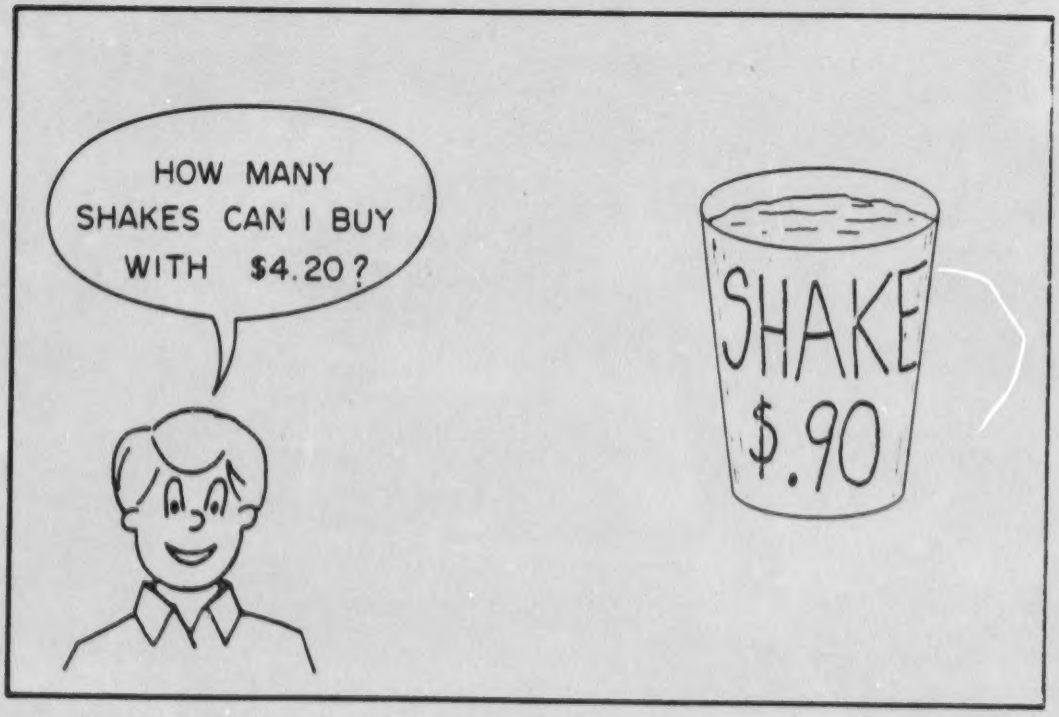
Content Objective: A. Number and Numeration

Process Objective: Applications of Estimation

Exercise Type: Multiple-choice
Stimulus Type: Text

Overlap: Package-Exercise: $\frac{13}{11\text{-}13}$ $\frac{17}{14\text{-}13}$

TOTAL TIME: (in seconds) $\frac{13}{14}$ $\frac{17}{14}$




- 2
- 3
- 4
- 5

- I don't know.

STOP

62

Report #: RA02444

NAEP #: 5-A02444-D1D-23

Content Objective: A. Number and Numeration

Process Objective: Applications of Estimation

Exercise Type: Multiple-choice
Stimulus Type: Text

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 11-12 | 17 / 14-12 |
| TOTAL TIME: (in seconds) | 13 / 14 | 17 / 14 |

- ⬭ $6
- ⬭ $12
- ⬬ $20
- ⬭ $25
- ⬭ $50

- ⬭ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

64

| | | | |
|---|---|---|---|
| Report #: | RA02844 | | |
| NAEP #: | 5-A02844-D1D-23 | | |
| Content Objective: | A. Number and Numeration | | |
| Process Objective: | Applications of Estimation | | |
| Exercise Type: | Multiple-choice | | |
| Stimulus Type: | Text | | |
| Overlap: Package-Exercise: | | $\frac{13}{11\text{-}11}$ | $\frac{17}{14\text{-}11}$ |
| TOTAL TIME: (in seconds) | | $\frac{13}{14}$ | $\frac{17}{14}$ |

How is 3,482,000 written in scientific notation?

- ⬭ $3 \times 10^6$
- ⬭ $3482 \times 10^3$
- ⬬ $3.482 \times 10^6$
- ⬭ $3.482 \times 10$

- ⬭ I don't know.

66

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA11111

NAEP #: 5-A11111-92D-3

Content Objective: A. Number and Numeration

Process Objective: Knowledge

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 17
Package-Exercise: 07-12

TOTAL TIME: (in seconds) 17
21

67

A. What is the number in the box?

- ⬭ thirteen
- ⬭ forty-two
- ⬭ fifty-seven
- ⬬ sixty-seven
- ⬭ seventy-six

- ⬭ I don't know.

243

B. What is the number in the box?

- ⬭ three hundred forty-two
- ⬭ four hundred twenty-three
- ⬭ six hundred forty-three
- ⬬ two hundred forty-three
- ⬭ two hundred thirty-four

- ⬭ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA11431

NAEP #: 5-A11431-92D-1

Content
Objective: A. Number and Numeration

Process
Objective: Knowledge
Stimulus Type: Text/Tape

Overlap: 9
Package-Exercise: 01-01

TOTAL TIME: (in seconds) 9
50

Which one of the following is the same as $\frac{1}{3}$?

- ○ $\frac{3}{2}$
- ○ $\frac{4}{5}$
- ● $\frac{2}{6}$
- ○ $\frac{5}{3}$

- ○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA11832

NAEP #: 5-A11832-92D-12

Content Objective: A. Number and Numeration

Process Objective: Skill in Computation

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 9 02-17 | 13 10-35 |
| TOTAL TIME: (in seconds) | 9 26 | 13 16 |

A. Which decimal is equal to $\frac{1}{4}$ ?

- ⬭ .14
- ⬬ .25
- ⬭ .4
- ⬭ .41
- ⬭ .5

⬭ I don't know.

B. Which decimal is equal to $\frac{3}{8}$ ?

- ⬬ .375
- ⬭ $.\overline{428571}$
- ⬭ $.\overline{66}$
- ⬭ $.\overline{77}$
- ⬭ $.8\overline{3}$

⬭ I don't know.

DO NOT CONTINUE
UNTIL TOLD TO DO SO

(Continued)

C. Which decimal is equal to $\frac{5}{6}$ ?

- ⬭ .375
- ⬭ $.\overline{428571}$
- ⬭ $.\overline{66}$
- ⬭ $.\overline{77}$
- ⬬ $.8\overline{3}$

- ⬭ I don't know.

DO NOT CONTINUE
UNTIL TOLD TO DO SO.

| | | | |
|---|---|---|---|
| Report #: | RA12632 | | |
| NAEP #: | 5-A12632-92D-23 | | |
| Content Objective: | A. Number and Numeration | | |
| Process Objective: | Skill in Computation | | |
| Exercise Type: | Multiple-choice | | |
| Stimulus Type: | Text/Tape | | |
| Overlap: Package-Exercise: | | 13 09-22 | 17 09-31 |
| TOTAL TIME: (in seconds) | | 13 69 | 17 61 |

A. What does the 5 stand for in the number in the box? 3,517

- ⬭ 5 ones
- ⬭ 5 tens
- ⬬ 5 hundreds
- ⬭ 5 thousands

⬭ I don't know.

B. What does the 2 stand for in the number in the box? 233

- ⬭ 2 ones
- ⬭ 2 tens
- ⬬ 2 hundreds
- ⬭ 2 thousands

⬭ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA14411

NAEP #: 5-A14411-920-12

Content Objective: A. Number and Numeration

Process Objective: Knowledge

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 9 / 04-15 | 13 / 07-11 |
| TOTAL TIME: (in seconds) | 9 / 42 | 13 / 38 |

Frank has a motorcycle that requires him to mix the oil with the gasoline. It takes $\frac{1}{2}$ pint of oil for every gallon of gasoline. If he wishes to put in $1\frac{1}{2}$ gallons of gasoline, how much oil will he need?

- ⬭ $\frac{1}{2}$ pint oil
- ⬭ $\frac{2}{3}$ pint oil
- ⬬ $\frac{3}{4}$ pint oil
- ⬭ 1 pint oil
- ⬭ I don't know.

77

Report #: RA21841

NAEP #: 5-A21841-92D-23

Content Objective: A. Number and Numeration

Process Objective: Applications of Routine Problems

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 10-10 | 17 / 12-28 |
| TOTAL TIME: (in seconds) | 17 / 50 | 13 / 40 |

Write in decimal form:

A. Six and three-thousandths

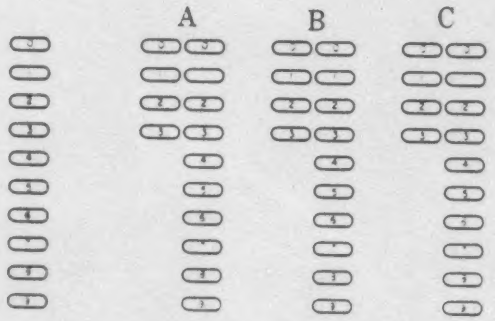
ANSWER _____

B. Forty-two ten-thousandths

ANSWER _____

C. Eight and six-hundredths

ANSWER _____




STOP DO NOT CONTINUE UNTIL TOLD TO DO SO



79

| | | | |
|---|---|---|---|
| Report #: | RA24031 | | |
| NAEP #: | 5-A24031-92D-23 | | |
| Content Objective: | A. Number and Numeration | | |
| Process Objective: | Knowledge | | |
| Exercise Type: | Open-ended | | |
| Stimulus Type: | Text/Type | | |
| Overlap: Package-Exercise: | | 13 / 08-40 | 17 / 10-25 |
| TOTAL TIME: (in seconds) | | 13 / 56 | 17 / 53 |

5-A24031-92D-2,3
SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

11 = 6.003

20 = OTHER

21 = 6 3/1000

22 = 63,000

23 = 6300

24 = 6.0003

25 = 6.03

26 = 6.3 OR 6.30

77 = I DON'T KNOW.

88 = NO RESPONSE

PART B:

11 = .0042

20 = OTHER

21 = 42/10,000

22 = 42,000

23 = 4200

24 = .00042

25 = .042

26 = THE DIGITS 421 WITH THE DECIMAL IN ANY POSITION TO THE RIGHT OF THE 4 (4.21, 4210, 421000, ETC.)

27 = THE DIGITS 421 WITH THE DECIMAL IN ANY POSITION TO THE LEFT OF THE 4 (.421, .0421, .00421, ETC.)

77 = I DON'T KNOW.

88 = NO RESPONSE

## SCORING GUIDE: PART C

Categories are listed below.

PART C:

11 = 8.06

20 = OTHER

21 = 8 6/100

22 = 86000

23 = 8600

24 = 860

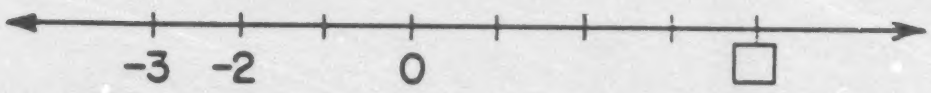
25 = 8.006

26 = 8.6 OR 8.600

77 = I DON'T KNOW.

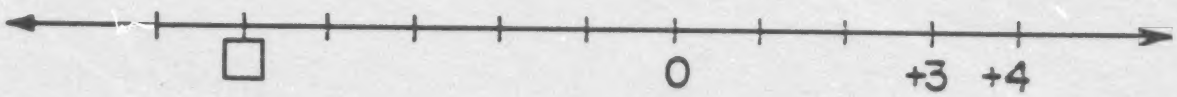
88 = NO RESPONSE

A. What number should be placed in the ☐ ?




ANSWER _____

B. What number should be placed in the ☐ ?




ANSWER _____

A B

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Report #: RA24431

NAEP #: 5-A24431-92D-23

Content Objective: A. Number and Numeration

Process Objective: Understanding

Exercise Type: Open-ended
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: | 13 | 17 |
| Package-Exercise: | 13-15 | 10-24 |
| TOTAL TIME: (in seconds) | 13 / 36 | 17 / 36 |

5-A24431-92D-2,3

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

11 = 4 OR +4

20 = OTHER

21 = -4

22 = 3

23 = 5

24 = 1

77 = I DON'T KNOW.

88 = NO RESPONSE

PART B:

11 = -5

20 = OTHER

21 = 5

22 = -4

23 = -6

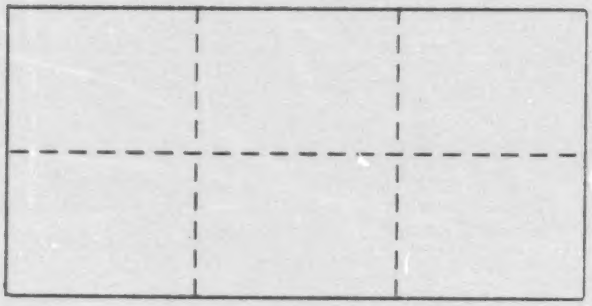
24 = 4

25 = 7

77 = I DON'T KNOW.

88 = NO RESPONSE

Shade 2/3 of the rectangle below.



STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.



86

Report #: RA25432

NAEP #: 5-A25432-92D-1

Content Objective: A. Number and Numeration

Process Objective: Understand

Exercise Type: Open-ended
Stimulus Type: Text/Tape

Overlap: 9
Package-Exercise: 02-13

TOTAL TIME: (in seconds) 9
28

5-A25432-92D-1
SCORING GUIDE

Categories are listed below.

11 = ANY FOUR OF THE SIX CELLS SHADED

12 = TWO-THIRDS OF THE LARGE RECTANGLE CORRECTLY SHADED IN SOME MANNER OTHER THAN CATEGORY 11

13 = OUTLINED 2/3 OF THE RECTANGLE BUT DID NOT SHADE

20 = OTHER

21 = PARTIAL SHADING IN 4 CELLS

22 = TWO OF THE SIX CELLS SHADED OR PARTIALLY SHADED

23 = SHADED 2 CELLS AND A PART OF A THIRD CELL

24 = 1/2, (3 CELLS) SHADED OR PARTIALLY SHADED

25 = 1/6 OR 5/6 (1 OR 5 CELLS) SHADED OR PARTIALLY SHADED

77 = I DON'T KNOW.

88 = NO RESPONSE

Round the following number to the nearest hundred:

4873

ANSWER _____



STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

5-A25632-43D-1
5-C70009-1

Report #: RA25632

NAEP #: 5-C70009-43D-1

Content Objective: A. Number and Numeration

Process Objective: Skill in Computation

Exercise Type: Open-ended
Stimulus Type: Text/Tape

Overlap: 9
Package-Exercise: 03-03

TOTAL TIME: (in seconds) 9
24

1981-82 N0303
1977-78 N0638
1972-73 N0623

5-A25632-43D-1
5-C70009-1
SCORING GUIDE

Categories are listed below.

11 = 4900

20 = OTHER

21 = 4800

22 = 5000

23 = 4973

24 = 900 OR 9

25 = 999 OR 99

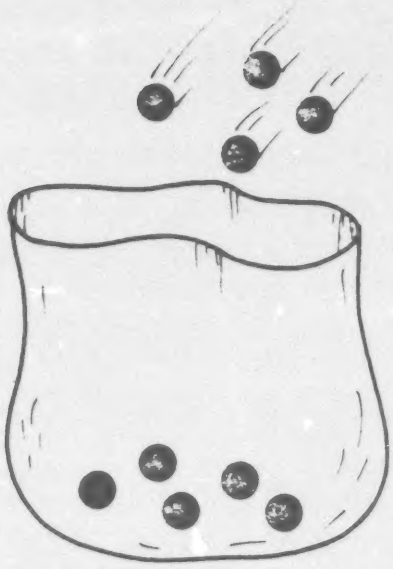
26 = 8, 800 OR CIRCLES 8

27 = 4903

28 = 5873

77 = I DON'T KNOW.

88 = NO RESPONSE



This picture shows two sets being joined together. What number sentence tells about this picture?

- ⬭ $4 \times 5 = \square$
- ⬭ $5 - 4 = \square$
- ⬬ $4 + 5 = \square$
- ⬭ $5 - \square = 4$

⬭ I don't know.

DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA30731

NAEP #: 5-A30731-92D-12

Content Objective: A. Number and Numeration

Process Objective: Understanding

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 9 / 04-28 | 13 / 07-17 |
| TOTAL TIME: (in seconds) | 9 / 39 | 13 / 27 |

ESTIMATE the answer to each of the problems on this and the next page. You will not be given enough time to calculate each answer using paper and pencil. Fill in the oval next to the answer CLOSEST to your ESTIMATE.

A. 347.0 + 938.0 + 1.327

- ○ 100
- ● 1000
- ○ 10000
- ○ 100000

- ○ I don't know.

B. .01 + .0001 + .0000009

- ○ 1
- ● .01
- ○ .00011
- ○ .1

- ○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

(Continued)

C. .34181 + .76062

- .90
- 1.00
- 1.10
- 1.20

- I don't know.

95

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA32732

NAEP #: 5-A32732-92D-23

Content Objective: A. Number and Numeration

Process Objective: Skill in Estimation

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: | 13 | 17 |
| Package-Exercise: | 07-34 | 12-15 |
| TOTAL TIME: (in seconds) | 13<br>71 | 17<br>80 |

Divide.

A. $3\overline{)304}$

ANSWER _____

B. $5\overline{)150}$

ANSWER _____

C. $12\overline{)2496}$

ANSWER _____

A B C

97

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA32921

NAEP #: 5-A32921-D1D-2

Content Objective: A. Number and Numeration

Process Objective: Skill in Computaton

Exercise Type: Open-ended
Stimulus Type: Text/Tape

Overlap: 13
Package-Exercise: 13-16

TOTAL TIME: (in seconds) 13
68

5-A32921-D1D-2
SCORING GUIDE: PART A

Categories are listed below.

PART A:

11 = $101.\overline{3}$ or 101.33

12 = 101 R 1

13 = 101 1/3

14 = 101.3, 101.33 OR 101.333...

20 = OTHER

21 = .00098684 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED 3 DIVIDED BY 304

22 = 101

23 = 11, 11 1/3, 11.33 OR 11 R 1

24 = 10.333... OR 1.333 OR OTHER DECIMAL PLACEMENT

25 = 101 R 3 OR 101 R 33

26 = 3304 OR 3043

77 = I DON'T KNOW

88 = NO RESPONSE

SCORING GUIDE: PART B

Categories are listed below.

11 = 30

20 = OTHER

21 = 0.0333...

22 = .333... AND OTHER DECIMAL PLACEMENT EXCEPT CATEGORY 21

23 = 5150 OR 1505

24 = 750 OR ATTEMPTED 150 x 5

25 = 3

26 = 150 OR 5

77 = I DON'T KNOW

88 = NO RESPONSE

# SCORING GUIDE: PART C

Categories are listed below.

11 = 208

20 = OTHER

21 = 0.0048076 OR ATTEMPATED 12 DIVIDED BY 2496

22 = 48076923 OR .48076 OR OTHER DECIMAL PLACEMENT EXCEPT CATEGORY 21

23 = 122496 OR 249612

24 = 29,952 OR ATTEMPTED 2496 x 12

25 = 20.8, 2.08 OR .208

26 = 28

27 = 2 R 96

77 = I DON'T KNOW

88 = NO RESPONSE

Divide.

A. $3\overline{)304}$

ANSWER _____

B. $5\overline{)150}$

ANSWER _____

C. $12\overline{)2496}$

ANSWER _____

A B C

102

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA32921K

NAEP #: 5-A32921K-D1D-123

Content Objective: F. Technology

Process Objective: Hand Held Calculator

Exercise Type: Open-ended
Stimulus Type: Text/Tape

| | | | |
|---|---|---|---|
| Overlap: Package-Exercise: | 9 06-16 | 13 11-25 | 17 14-26 |
| TOTAL TIME: (in seconds) | 9 93 | 13 68 | 17 48 |

5-A32921KD1D-1,2,3
SCORING GUIDE: PART A

Categories are listed below.

PART A:

11 = 101.3 or 101.33

12 = 101 R 1

13 = 101 1/3

14 = 101.3, 101.33 OR 101.333...

20 = OTHER

21 = .00098684 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED 3 DIVIDED BY 304

22 = 101

23 = 11, 11 1/3, 11.33 OR 11 R 1

24 = 10.333... OR 1.333 OR OTHER DECIMAL PLACEMENT

25 = 101 R 3 OR 101 R 33

26 = 3304 OR 3043

77 = I DON'T KNOW

88 = NO RESPONSE

## SCORING GUIDE: PART B

Categories are listed below.

11 = 30

20 = OTHER

21 = 0.0333...

22 = .333... AND OTHER DECIMAL PLACEMENT EXCEPT CATEGORY 21

23 = 5150 OR 1505

24 = 750 OR ATTEMPTED 150 x 5

25 = 3

26 = 150 OR 5

77 = I DON'T KNOW

88 = NO RESPONSE

# SCORING GUIDE: PART C

Categories are listed below.

11 = 208

20 = OTHER

21 = 0.0048076 OR ATTEMPATED 12 DIVIDED BY 2496

22 = 48076923 OR .48076 OR OTHER DECIMAL PLACEMENT EXCEPT CATEGORY 21

23 = 122496 OR 249612

24 = 29,952 OR ATTEMPTED 2496 x 12

25 = 20.8, 2.08 OR .208

26 = 28

27 = 2 R 96

77 = I DON'T KNOW

88 = NO RESPONSE

5049
-3892

The answer to this subtraction problem is closest to:

- 1000
- 2000
- 3000
- 9000

- I don't know.

107

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA34032

NAEP #: 5-A34032-92D-123

Content Objective: A. Number and Numeration

Process Objective: Skill in Estimation

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | | |
|---|---|---|---|
| Overlap: Package-Exercise: | 9 04-23 | 13 08-29 | 17 08-03 |
| TOTAL TIME: (in seconds) | 9 21 | 13 21 | 17 13 |

During a race around the school, Stacy's time was 26 seconds. Tommy's time was 39 seconds. How many seconds faster was Stacy than Tommy?

ANSWER _____

STOP

DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA34342

NAEP #: 5-A34342-92D-12

Content Objective: A. Number and Numeration

Process Objective: Applications of Routine Problems

Exercise Type: Open-ended
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 9 / 01-08 | 13 / 12-03 |
| TOTAL TIME: (in seconds) | 9 / 36 | 13 / 31 |

5-A34342-92D-1,2
SCORING GUIDE

Categories are listed below.

11 = 13

20 = OTHER

21 = ATTEMPTED 39 - 26 WITH NO OR WRONG ANSWER

22 = 65 OR ATTEMPTED 39 + 26

23 = 39

77 = I DON'T KNOW.

98 = NO RESPONSE

Pam has $4\frac{3}{4}$ cups of flour. If she uses $2\frac{1}{2}$ cups to make a cake, how much flour will she have left?

ANSWER _____

STOP

DO NOT CONTINUE UNTIL TOLD TO DO SO

Report #: RA35241

NAEP #: 5-A35241-92D-23

Content Objective: A. Number and Numeration

Process Objective: Applicatons of Routine Problems

Exercise Type: Open-ended
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 10-18 | 17 / 12-35 |
| TOTAL TIME: (in seconds) | 13 / 34 | 17 / 34 |

5-A35241-92D-2,3
SCORING GUIDE

Categories are listed below.

11 = 2 1/4 OR 2.25 WITH OR WITHOUT CUPS

20 = OTHER

21 = 7 1/4 OR ATTEMPTED 4 3/4 + 2 1/2

22 = 2 2/2 OR 3

23 = 2 1/2 OR 2 2/4

24 = 2

77 = I DON'T KNOW.

88 = NO RESPONSE

On the same day, the highest temperature at Nome, Alaska, was 28 degrees below zero, and the highest temperature at Miami, Florida, was 78 degrees above zero. What was the difference between the two temperatures?

ANSWER _____

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA36341

NAEP #: 5-A36341-92D-23

Content Objective: A. Number and Numeration

Process Objective: Applications of Routine Problems

Exercise Type: Open-ended
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 10-40 | 17 / 13-13 |
| TOTAL TIME: (in seconds) | 13 / 50 | 17 / 34 |

5-A36341-920-2,3
SCORING GUIDE

Categories are listed below.

11 = 106

20 = OTHER

21 = 96

22 = 50 OR ATTEMPTED 78 - 28

23 = ATTEMPTED 78 + 28 OR 78 - (-28) WITH NO OR WRONG ANSWER

77 = I DON'T KNOW.

88 = NO RESPONSE

Six simple addition problems will be read to you. Write only the ANSWERS in the spaces provided.

A. _____

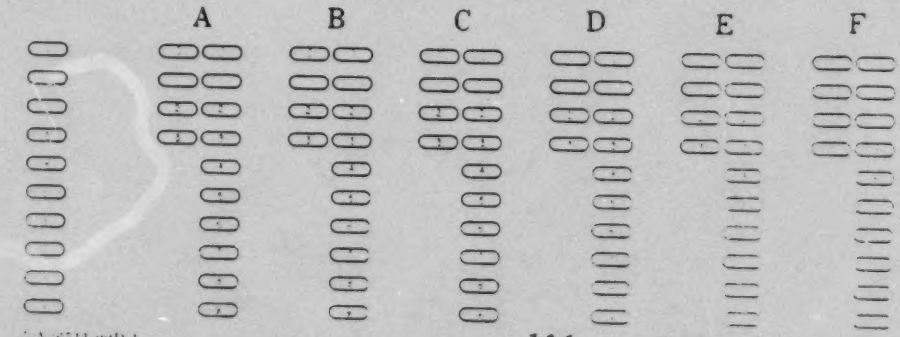
B. _____

C. _____

D. _____

E. _____

F. _____



DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: MA36511

NAEP #: 5-A36511-92D-1

Content Objective: A. Number and Numeration

Process Objective: Knowledge of Basic Number Facts

Exercise Type: Open-ended
Stimulus Type: Tape

Overlap: 9
Package-Exercise: 02-09

TOTAL TIME: (in seconds) 9
42

5-A36511-92D-1
SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

11 = 7

20 = OTHER

21 = 6 + 1

22 = 6

23 = 8

77 = I DON'T KNOW.

88 = NO RESPONSE

PART B:

11 = 7

20 = OTHER

21 = 3 + 4

22 = 6

23 = 8

77 = I DON'T KNOW.

88 = NO RESPONSE

# SCORING GUIDE: PARTS C & D

Categories are listed below.

**PART C:**

11 = 9

20 = OTHER

21 = 2 + 7

22 = 8

23 = 10

77 = I DON'T KNOW.

88 = NO RESPONSE

**PART D:**

11 = 14

20 = OTHER

21 = 6 + 8

22 = 13

23 = 15

77 = I DON'T KNOW.

88 = NO RESPONSE

# SCORING GUIDE: PARTS E & F

Categories are listed below.

**PART E:**

11 = 12

20 = OTHER

21 = 9 + 3

22 = 11

23 = 13

77 = I DON'T KNOW.

88 = NO RESPONSE

**PART F:**

11 = 13

20 = OTHER

21 = 6 + 7

22 = 12

23 = 14

77 = I DON'T KNOW.

88 = NO RESPONSE

Six simple subtraction problems will be read to you. Write only the ANSWERS in the spaces provided.

A. _____

B. _____

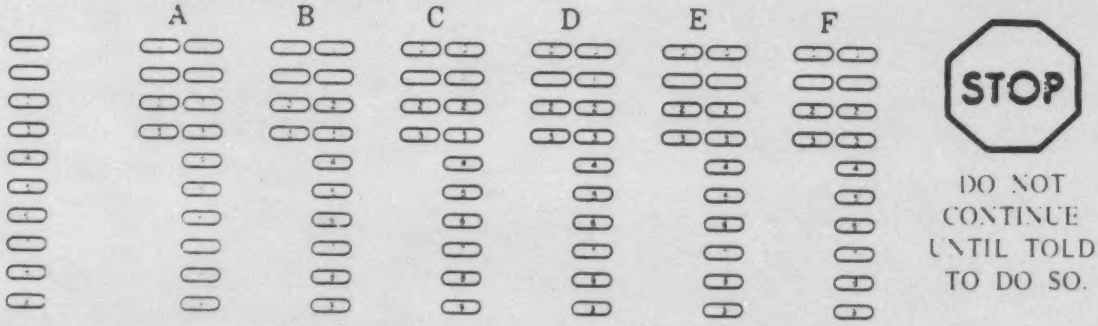
C. _____

D. _____

E. _____

F. _____

---







DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA37111

NAEP #: 5-A37111-92D-1

Content Objective: A. Number and Numeration

Process Objective: Knowledge of Basic Number Facts

Exercise Type: Open-ended
Stimulus Type: Tape

Overlap: 9
Package-Exercise: 05-23

TOTAL TIME: (in seconds) 9
44

5-A37111-92D-1
SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

11 = 6

20 = OTHER

21 = 7 - 1

22 = 5

23 = 7

24 = 8

77 = I DON'T KNOW.

88 = NO RESPONSE

PART B:

11 = 3

20 = OTHER

21 = 8 - 5

22 = 2

23 = 4

24 = 13

77 = I DON'T KNOW.

88 = NO RESPONSE

# SCORING GUIDE: PARTS C & D

Categories are listed below.

PART C:

11 = 5

20 = OTHER

21 = 12 - 7

22 = 4

23 = 6

24 = 19

77 = I DON'T KNOW.

88 = NO RESPONSE

PART D:

11 = 7

20 = OTHER

21 = 16 - 9

22 = 6

23 = 8

24 = 25

25 = NOT USED

26 = 5

77 = I DON'T KNOW.

88 = NO RESPONSE

SCORING GUIDE: PARTS E & F

Categories are listed below.

PART E:

11 = 7

20 = OTHER

21 = 9 - 2

22 = 6

23 = 8

24 = 11

77 = I DON'T KNOW.

88 = NO RESPONSE

PART F:

11 = 6

20 = OTHER

21 = 13 - 7

22 = 5

23 = 7

24 = 20

77 = I DON'T KNOW.

88 = NO RESPONSE

George had $\frac{3}{4}$ of a pie. He ate $\frac{3}{5}$ of that. How much pie did he eat?

- ○ $\frac{3}{20}$
- ○ $\frac{3}{10}$
- ● $\frac{9}{20}$
- ○ $\frac{6}{9}$
- ○ $\frac{5}{4}$

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA42241

NAEP #: 5-A42241-92D-23

Content Objective: A. Number and Numeration

Process Objective: Applications of Routine Problems

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13<br>12-31 | 17<br>09-16 |
| TOTAL TIME: (in seconds) | 13<br>37 | 17<br>28 |

What is the correct placement of the decimal point in each of the following multiplication problems?

A. $76.5 \times 8.23 =$

- ⬭ 629595.
- ⬬ 629.595
- ⬭ 62.9595
- ⬭ 6295.95

- ⬭ I don't know.

B. $.0055 \times 32456$

- ⬭ 17850.80
- ⬬ 17.85080
- ⬭ 1785.080
- ⬭ 178.5080

- ⬭ I don't know.

C. $.3 \times .2 =$

- ⬭ 6.
- ⬭ 60.
- ⬭ .6
- ⬬ .06

- ⬭ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA42832

NAEP #: 5-A42832-92D-23

Content Objective: A. Number and Numeration

Process Objective: Skill in Computation

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: | 13 | 17 |
| Package-Exercise: | 10-32 | 08-22 |
| TOTAL TIME: (in seconds) | 13 | 17 |
| | 65 | 53 |

A. What is 10% of 50?

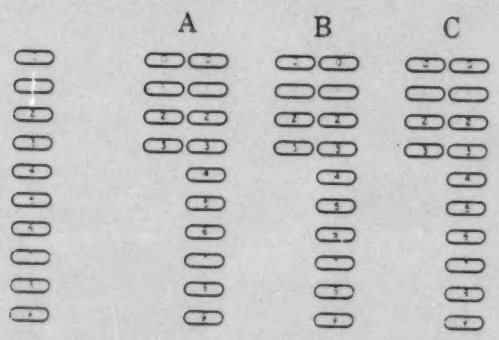
ANSWER _____

B. What is 60% of 50?

ANSWER _____

C. What is 75% of 12?

ANSWER _____



DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Report #: RA44621

NAEP #: 5-A44621-D1D-2

Content Objective: A. Number and Numeration

Process Objective: Skill in Computation

Exercise Type: Open-ended
Stimulus Type: Text/Tape

Overlap: 13
Package-Exercise: 14-13

TOTAL TIME: (in seconds) 13
57

5-A44621-D1D-2
SCORING GUIDE: PART A

PART A:

11 = 5, 5.0 OR EQUIVALENT

20 = OTHER

21 = 4

22 = 10

23 = 2

24 = 500% WITH OR WITHOUT LABEL

25 = 60% WITH OR WITHOUT LABEL

26 = 40% WITH OR WITHOUT LABEL

27 = 20%

28 = 1/5, .2 OR EQUIVALENT

29 = 5%

77 = I DON'T KNOW

88 = NO RESPONSE

SCORING GUIDE: PART B

Categories are listed below.

11 = 30

20 = OTHER

21 = 10 OR 1

22 = 3 OR 3.0

23 = 60

24 = 12

25 = 3000% WITH OR WITHOUT LABEL

26 = 120% WITH OR WITHOUT LABEL

27 = 110% OR 11% WITH OR WITHOUT LABEL

28 = 5/6, .83, 50/60, 6/5, 60/50, 1 1/5

29 = 30%

77 = I DON'T KNOW

88 = NO RESPONSE

SCORING GUIDE: PART C

Categories are listed below.

11 = 9, 9.0 OR EQUIVALENT

20 - OTHER

21 = 25

22 = 8

23 = 6

24 = 3

25 = 900% WITH OR WITHOUT LABEL

26 = 87% WITH OR WITHOUT LABEL

27 = 63% WITH OR WITHOUT LABEL

28 = 12/75, 75/12, 4/25 OR 25/4

29 = 9%

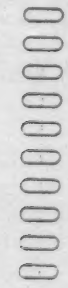
77 = I DON'T KNOW

88 = NO RESPONSE

Which one of the following means "six used as a factor five times"?

- ⬭ $5^6$
- ⬬ $6^5$
- ⬭ $6+6+6+6+6$
- ⬭ $5+5+5+5+5+5$

- ⬭ I don't know.



DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Report #: RA46232

NAEP #: 5-A46232-92D-23

Content Objective: A. Number and Numeration

Process Objective: Knowledge

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 14-25 | 17 / 10-13 |
| TOTAL TIME: (in seconds) | 13 / 20 | 17 / 15 |

A store is offering a discount of 15 percent on fishing rods. What is the amount a customer will save on a rod regularly priced at $25.00?

ANSWER_____

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Report #: RA47344

NAEP #: 5-C50002-43D-23

Content Objective: A. Number and Numeration

Process Objective: Applications of Routine Problems

Exercise Type: Open-ended
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 09-38 | 17 / 09-08 |
| TOTAL TIME: (in seconds) | 13 / 41 | 17 / 40 |

5-A47344-43D-2,3
5-C50002-2,3

SCORING GUIDE

Categories are listed below.

1 = $3.75, 3.75 OR 375¢

0 = OTHER

1 = 21.25 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED 25 X .85, 25 - (25 X .15) OR 25 - 3.75

2 = $10, 10, -10, 24.85 OR ATTEMPTED 25 - 15 OR 25 - .15

3 = $15, 15, .15 OR 15¢

4 = 166, 1.66, 1.67, 1.6 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED $15\overline{)25}$

5 = .6 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED $25\overline{)15}$

6 = $11.\overline{11}$ OR OTHER DECIMAL PLACEMENT

7 = $3.75¢, 375 WITHOUT ¢, OTHER DECIMAL PLACEMENT OF 3.75 OTHER THAN CATEGORY 11 OR ATTEMPTED 25 X .15 WITH NO OR WRONG ANSWER

7 = I DON'T KNOW.

8 = NO RESPONSE

A store is offering a discount of 15 percent on fishing rods. What is the amount a customer will save on a rod regularly priced at $25.00?

ANSWER _____

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA47344K

NAEP #: 5-C50002K-92D-23

Content Objective: F. Technology

Process Objective: Hand Held Calculator

Exercise Type: Open-ended
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 11-19 | 17 / 14-19 |
| TOTAL TIME: (in seconds) | 13 / 41 | 17 / 41 |

5-A47344K92D-2,3
5-C50002K-2,3

SCORING GUIDE

Categories are listed below.

1 = $3.75, 3.75 OR 375¢

0 = OTHER

1 = 21.25 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED 25 X .85, 25 - (25 X .15) OR 25 - 3.75

2 = $10, 10, -10, 24.85 OR ATTEMPTED 25 - 15 OR 25 - .15

3 = $15, 15, .15 OR 15¢

4 = 166, 1.66, 1.67, 1.6 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED $15\overline{)25}$

5 = .6 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED $25\overline{)15}$

6 = $11.\overline{11}$ OR OTHER DECIMAL PLACEMENT

7 = $3.75¢, 375 WITHOUT ¢, OTHER DECIMAL PLACEMENT OF 3.75 OTHER THAN CATEGORY 11 OR ATTEMPTED 25 X .15 WITH NO OR WRONG ANSWER

7 = I DON'T KNOW.

8 = NO RESPONSE

Six simple multiplication problems will be read to you. Write only the ANSWERS in the spaces provided.

A. _____

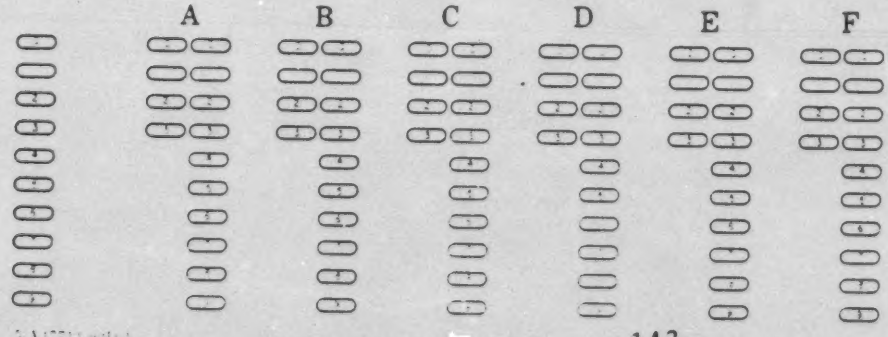
B. _____

C. _____

D. _____

E. _____

F. _____



DO NOT CONTINUE UNTIL TOLD TO DO SO

Report #: RA47711

NAEP #: 5-A47711-92D-1

Content Objective: A. Number and Numeration

Process Objective: Knowledge of Basic Number Facts

Exercise Type: Open-ended
Stimulus Type: Tape

Overlap: 9
Package-Exercise: 04-33

TOTAL TIME: (in seconds) 9
52

5-A47711-92D-1

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

11 = 24

20 = OTHER

21 = 3 X 8

22 = 11

23 = 5 OR -5

24 = 16 OR 32

25 = 21 OR 27

26 = 38

77 = I DON'T KNOW.

88 = NO RESPONSE

PART B:

11 = 48

20 = OTHER

21 = 8 X 6

22 = 14

23 = 2 OR -2

24 = 42 OR 54

25 = 40 OR 56

26 = 86

77 = I DON'T KNOW.

88 = NO RESPONSE

# SCORING GUIDE: PARTS C & D

Categories are listed below.

PART C:

11 = 20

20 = OTHER

21 = 4 X 5

22 = 9

23 = 1 OR -1

24 = 15 OR 25

25 = 16 OR 24

26 = 45

77 = I DON'T KNOW.

88 = NO RESPONSE

PART D:

11 = 28

20 = OTHER

21 = 7 X 4

22 = 11

23 = 3 OR -3

24 = 24 OR 32

25 = 21 OR 35

26 = 74

77 = I DON'T KNOW.

88 = NO RESPONSE

## SCORING GUIDE: PARTS E & F

Categories are listed below.

**PART E:**

11 = 18

20 = OTHER

21 = 2 X 9

22 = 11

23 = 7 OR -7

24 = 9 OR 27

25 = 16 OR 20

26 = 29

77 = I DON'T KNOW.

88 = NO RESPONSE

**PART F:**

11 = 42

20 = OTHER

21 = 6 X 7

22 = 13

23 = 1 OR -1

24 = 35 OR 49

25 = 36 OR 48

26 = 67

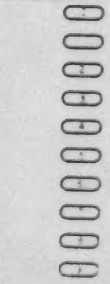
77 = I DON'T KNOW.

88 = NO RESPONSE

Which one of the following is the same as $4 \times 7$?

- ⬭ 47
- ⬭ $4 + 7$
- ⬬ $7 + 7 + 7 + 7$
- ⬭ $\frac{4}{7}$

⬭ I don't know.



DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Report #: RA47832

NAEP #: 5-A47832-92D-1

Content Objective: A. Number and Numeration

Process Objective: Knowledge

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 9
Package-Exercise: 01-07

TOTAL TIME: (in seconds) 9
26

An army bus holds 36 soldiers. If 1128 soldiers are being bused to their training site, how many buses are needed?

ANSWER _____

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA48221

NAEP #: 5-A48221-92D-2

Content
Objective: A. Number and Numeration

Process
Obje tive: Applications of Routine Problems

Exercise Type: Open-ended
Stimulus Type: Text/Tape

Overlap: 13
Package-Exercise: 10-37

TOTAL TIME: (in seconds) 13
-5

5-A48221-92D-2
SCORING GUIDE

ategories are listed below.

1 = 32 BUSES OR 32

0 = OTHER

1 = $31.33\overline{3}$, 31 1/3, 31 R 12 OR ATTEMPTED $36\overline{)1128}$

2 = .0319148 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED $1128\overline{)36}$

3 = 1164 OR ATTEMPTED 1128 + 36

4 = 1092 OR ATTEMPTED 1128 - 36

5 = 31

6 = 40,608 OR ATTEMPTED 1128 X 36

7 = I DON'T KNOW.

8 = NO RESPONSE

An army bus holds 36 soldiers. If 1128 soldiers are being bused to their training site, how many buses are needed?

ANSWER _____

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Report #: RA48221K

NAEP #: 5-A48221K-92D-23

Content Objective: F. Technology

Process Objective: Hand Held Calculator

Exercise Type: Open-ended
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13<br>11-18 | 17<br>14-18 |
| TOTAL TIME: (in seconds) | 13<br>45 | 17<br>35 |

5-A48221K92D-2,3

SCORING GUIDE

ategories are listed below.

1 = 32 BUSES OR 32

0 = OTHER

1 = 31.33$\overline{3}$, 31 1/3, 31 R 12 OR ATTEMPTED $36\overline{)1128}$

2 = .0319148 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED $1128\overline{)36}$

3 = 1164 OR ATTEMPTED 1128 + 36

4 = 1092 OR ATTEMPTED 1128 - 36

5 = 31

6 = 40,608 OR ATTEMPTED 1128 X 36

7 = I DON'T KNOW.

8 = NO RESPONSE

Which one of the following numbers is GREATER than $\frac{1}{3}$ but LESS than $\frac{3}{4}$ ?

- ○ $\frac{1}{5}$
- ○ $\frac{1}{4}$
- ● $\frac{1}{2}$
- ○ $\frac{5}{6}$

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO



5-A51932-43D-2.3
5-C20023-2.3

Report #: RA51932

NAEP #: 5-C20023-43D-23

Content Objective: A. Number and Numeration

Process Objective: Knowledge

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 08-02 | 17 / 11-02 |
| TOTAL TIME: (in seconds) | 13 / 80 | 17 / 75 |

Arrange the given numbers from LEAST to GREATEST.

0.07, 0.4, 0.23, 0.009, 0.1

LEAST ____ ____ ____ ____ ____ GREATEST

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

160

| | |
|---|---|
| Report #: | RA52132 |
| NAEP #: | 5-A52132-92D-23 |
| Content Objective: | A. Number and Numeration |
| Process Objective: | Knowledge |
| Exercise Type: | Open-ended |
| Stimulus Type: | Text/Tape |

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 12-17 | 17 / 07-24 |
| TOTAL TIME: (in seconds) | 13 / 39 | 17 / 38 |

5-A52132-92D-2,3

SCORING GUIDE

Categories are listed below.

11 = 0.009, 0.07, 0.1, 0.23, 0.4

20 = OTHER

21 = .009, .23, .07, .4, .1

22 = .009, .07, .23, .4, .1

23 = 0.1, 0.4, 0.07, 0.23, 0.009

24 = 0.1, 0.4, 0.07, 0.009, 0.23

25 = .23, .009, .07, .4, .1

26 = 0.4, 0.23, 0.1, 0.07, 0.009

27 = .009, .07, .23, .1, .4

28 = .009, .07, .1, .4, .23

77 = I DON'T KNOW.

88 = NO RESPONSE

The integers are the numbers

. . . -3, -2, -1, 0, 1, 2, 3 . . .

If a and b are integers, then

| | | | | |
|---|---|---|---|---|
| A. | a + b is an integer. | | | |
| | Always ● | Sometimes ○ | Never ○ | I don't know. ○ |
| B. | a − b is an integer. | | | |
| | Always ● | Sometimes ○ | Never ○ | I don't know. ○ |
| C. | a · b is an integer. | | | |
| | Always ● | Sometimes ○ | Never ○ | I don't know. ○ |
| D. | a ÷ b is an integer. | | | |
| | Always ○ | Sometimes ● | Never ○ | I don't know. ○ |

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA61132

NAEP #: 5-A61132-92D-23

Content Objective: A. Number and Numeration

Process Objective: Knowledge

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 07-22 | 17 11-13 |
| TOTAL TIME: (in seconds) | 13 88 | 17 78 |

Jason bought 3 boxes of pencils. What else do you need to know to find out how many pencils he bought?

ANSWER _____

_____

_____

_____

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA70443

NAEP #: 5-A70443-92D-12

Content Objective: A. Number and Numeration

Process Objective: Understanding

Exercise Type: Open-ended
Stimulus Type: Text/Tape

Overlap: 9
Package-Exercise: 04-21

TOTAL TIME: (in seconds) 9
32

5-A70443-92D-1
SCORING GUIDE

Categories are listed below.

11 = NEED TO KNOW HOW MANY PENCILS IN A BOX

20 = OTHER

21 = HOW MANY PENCILS, HOW MANY, HOW MANY IN THE BOXES

22 = HOW MUCH THEY COST, HOW MUCH MONEY, ETC.

23 = COUNT THEM

24 = NAMES AN OPERATION: DIVIDE, SUBTRACT, ETC.

25 = 3, THREE AND OTHER NUMERIC ANSWERS

77 = I DON'T KNOW.

88 = NO RESPONSE

Ms. Robinson spent $2.48 on stamps. She bought some 10¢ stamps and some 16¢ stamps. If she bought 23 stamps, how many 10¢ and 16¢ stamps did she get?

ANSWER _____ 10¢ stamps

_____ 16¢ stamps

(1) (2)

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

168

Report #: RA71443

NAEP #: 5-A71443-92D-23

Content Objective: A. Number and Numeration

Process Objective: Applications of Routine Problems

Exercise Type: Open-ended
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 12-07 | 17 / 13-29 |
| TOTAL TIME: (in seconds) | 13 / 105 | 17 / 86 |

5-A71443-92D-2,3
SCORING GUIDE

Categories are listed below.

11 = 20--10¢ AND 3--16¢ STAMPS WITH NO CORRECT EQUATIONS, AND NO CORRECT PAIR OF EQUATIONS

12 = 20--10¢ STAMPS AND 3--16¢ STAMPS WITH INDICATION OF 3 X 16 OR 16 + 16 + 16

13 = 20--10¢ STAMPS AND 3--16¢ STAMPS WITH A CORRECT EQUATION; I.E., $10X + (23 - X)16 = 248$, $10(23 - X) + 16X = 248$ OR EQUIVALENT, OR A CORRECT PAIR OF EQUATIONS SUCH AS $10X + 16Y = 248$ AND $X + Y = 23$ OR EQUIVALENT

20 = OTHER

21 = 12--10¢ STAMPS AND 8--16¢ STAMPS; OR 4--10¢ STAMPS AND 13--16¢ STAMPS.

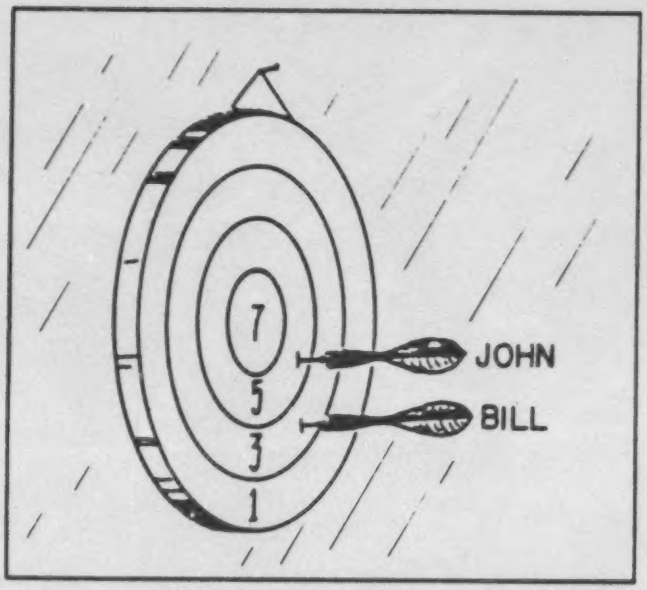
22 = THE SUM OF THE 10¢ AND 16¢ STAMPS IS 23 (EXCEPT FOR CATEGORIES 11, 12 OR 13); 11--10¢ STAMPS AND 12--16¢ STAMPS; 13--10¢ STAMPS AND 10--16¢ STAMPS

23 = WROTE $10X + 16Y = 248$ OR EQUIVALENT WITH NO OR WRONG ANSWER OR $X + Y = 23$ OR EQUIVALENT WITH NO OR WRONG ANSWER

24 = WROTE CORRECT NUMBERS IN WRONG LINES. 3--10¢ STAMPS AND 20--16¢ STAMPS

77 = I DON'T KNOW.

88 = NO RESPONSE




John threw a dart that landed in the 5 area. Bill threw a dart that landed in the 3 area. Each boy has one more dart to throw. It is now John's turn. Where are the possible places that John can throw his dart so that Bill cannot tie or beat him?

- In the 7 area only
- In the 7 or in the 5 area only
- In the 7, in the 5, or in the 3 area
- John can't be sure to win after his throw. He has to wait until Bill throws his dart.
- I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA72043

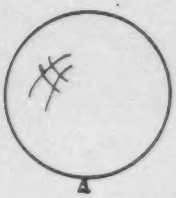
NAEP #: 5-A72043-92D-12

Content Objective: A. Number and Numeration

Process Objective: Applications of Non-Routine Problems

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

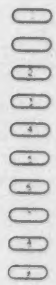
| | | |
|---|---|---|
| Overlap: Package-Exercise: | 9 03-17 | 13 08-20 |
| TOTAL TIME: (in seconds) | 9 94 | 13 89 |



Joyce has 50¢. Which of the following can she buy?

- ⬭ 3 candy bars and a pencil
- ⬭ 4 ice cream cones and a candy bar
- ⬬ 5 apples and 3 balloons
- ⬭ 3 apples and 3 ice cream cones

- ⬭ I don't know.



DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Report #: RA80944

NAEP #: 5-A80944-92D-12

Content Objective: A. Number and Numeration

Process Objective: Applications of Routine Problems

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

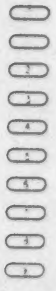
| | | |
|---|---|---|
| Overlap: Package-Exercise: | 9 / 02-05 | 13 / 08-12 |
| TOTAL TIME: (in seconds) | 9 / 78 | 13 / 64 |

Suppose you want to bake some cakes for a party. Two cake recipes require the following amounts of flour:

| Pineapple Swirl Cake | Chocolate Velvet Cake |
|---|---|
| $2\frac{1}{3}$ cups flour | $2\frac{1}{2}$ cups flour |

How much flour will be needed to make three Pineapple Swirl Cakes and two Chocolate Velvet Cakes?

- ⬭ $4\frac{5}{6}$
- ⬭ 7
- ⬭ $10\frac{5}{6}$
- ⬬ 12
- ⬭ $12\frac{1}{6}$
- ⬭ I don't know.



DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA81042

NAEP #: 5-A81042-92D-23

Content Objective: A. Number and Numeration

Process Objective: Applications of Routine Problems

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: | 13 | 17 |
| Package-Exercise: | 09-13 | 11-20 |
| TOTAL TIME: (in seconds) | 13 | 17 |
| | 64 | 62 |

Fiscal National Bank
Box 777
Mayday, Oregon

T.T. Meriweather
17 Storm Lane

Statement of Account

| Acct. No. | Date |
|---|---|
| 7-472-234 | May 4, 197- |

Balance Forward
$543.12

| Date | Debits | | Credits | New Balance |
|---|---|---|---|---|
| 4-4 | 13.22 | 12.75 | | 517.15 |
| 4-7 | 230.00 | | | 287.15 |
| 4-9 | 193.17 | 15.06 | | 78.92 |
| 4-15 | 20.00 | | 175.00 | 233.92 |
| 4-19 | 37.42 | | | 196.50 |
| 4-23 | 17.49 | 28.73 | | 150.28 |
| 4-28 | 52.65 | 16.12 | | 81.51 |
| | 1.00 | Service Charge | | 80.51 |

| Debits | | Credits | | New Balance |
|---|---|---|---|---|
| No. | Total | No. | Total | |
| 12 | 637.61 | 1 | 175.00 | 80.51 |

A. How much money does T. T. Meriweather presently have in this account?

- ▬ $ 80.51
- ⬭ $175.00
- ⬭ $543.12
- ⬭ $636.61

- ⬭ I don't know.

B. What is the total amount of debits this month?

- ⬭ $ 80.51
- ⬭ $175.00
- ⬭ $543.12
- ▬ $637.61

- ⬭ I don't know.

DO NOT CONTINUE
UNTIL TOLD TO DO SO.

177

Report #: RA90144

NAEP #: 5-A90144-92D-3

Content Objective: E. Probability and Statistics

Process Objective: Skill

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 17
Package-Exercise: 13-06

TOTAL TIME: (in seconds) 17
49

Linda's new bike cost $159.99 and the sales tax was 5%. How much did she pay including tax?

- ⬭ $164.99
- ⬬ $167.99
- ⬭ $172.98
- ⬭ $177.99

- ⬭ I don't know.

DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RA91944

NAEP #: 5-A91944-92D-3

Content Objective: A. Number and Numeration

Process Objective: Applicatons of Routine Problems

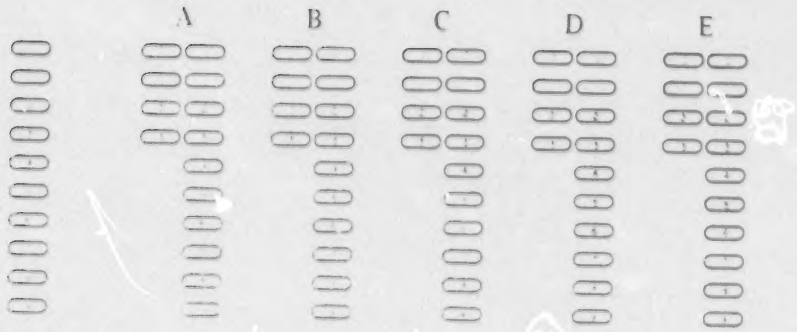
Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 17
Package-Exercise: 11-09

TOTAL TIME: (in seconds) 17
69

Use the sales tax collection chart on the opposite page to find the amount of tax to be added to the following sales transactions. Write the tax amount on the blank line next to each transaction.

| Transaction | | Tax |
|---|---|---|
| A. | S .90 | _____ |
| B. | S 6.89 | _____ |
| C. | S12.35 | _____ |
| D. | S 6.00 | _____ |
| E. | S 8.97 | _____ |



(Continued)

## SALES TAX COLLECTION CHART

| Amount of Sale | | Total |
|---|---|---|
| $ .01 to $ | .18 | $ .00 |
| .19 to | .51 | .03 |
| .52 to | .84 | .06 |
| .85 to | 1.18 | .09 |
| 1.19 to | 1.51 | .12 |
| 1.52 to | 1.84 | .15 |
| 1.85 to | 2.18 | .18 |
| 2.19 to | 2.51 | .21 |
| 2.52 to | 2.84 | .24 |
| 2.85 to | 3.18 | .27 |
| 3.19 to | 3.51 | .30 |
| 3.52 to | 3.84 | .33 |
| 3.85 to | 4.18 | .36 |
| 4.19 to | 4.51 | .39 |
| 4.52 to | 4.84 | .42 |
| 4.85 to | 5.18 | .45 |

| Amount of Sale | | Total |
|---|---|---|
| $ 5.19 to | 5.51 | $ .48 |
| 5.52 to | 5.84 | .51 |
| 5.85 to | 6.18 | .54 |
| 6.19 to | 6.51 | .57 |
| 6.52 to | 6.84 | .60 |
| 6.85 to | 7.18 | .63 |
| 7.19 to | 7.51 | .66 |
| 7.52 to | 7.84 | .69 |
| 7.85 to | 8.18 | .72 |
| 8.19 to | 8.51 | .75 |
| 8.52 to | 8.84 | .78 |
| 8.85 to | 9.18 | .81 |
| 9.19 to | 9.51 | .84 |
| 9.52 to | 9.84 | .87 |
| 9.85 to | 10.18 | .90 |

DO NOT CONTINUE UNTIL TOLD TO DO SO.

1981-82 T1241 S1206
1977-78 T0340 S1104
1972-73 T0326 S1113

5-A94123-43D-2,3
5-P00001-2,3

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

11 = $.09

12 = .09

13 = 9¢

15 = $.99, .99 OR 99¢

20 = OTHER

21 = 9, .09¢ OR ¢.09

23 = 9?

77 = I DON'T KNOW.

88 = NO RESPONSE

PART B:

11 = $.63

12 = .63

13 = 63¢

15 = $7.52, 7.52 OR 752¢

20 = OTHER

21 = 63 OR .63¢

23 = 752

77 = I DON'T KNOW.

88 = NO RESPONSE

## SCORING GUIDES: PARTS C & D

Categories are listed below.

PART C:

11 = $1.11

12 = 1.11

13 = 111¢

14 = $1.08, 1.08, OR 108¢

15 = $13.43, $13.46, 13.43, 13.46, 1343¢ OR 1346¢

20 = OTHER

21 = 111 OR $1.11¢

22 = 108 OR 1.08¢

23 = 1343 OR 1346

77 = I DON'T KNOW.

88 = NO RESPONSE

PART D:

11 = $.54

12 = .54

13 = 54¢

15 = $6.54, 6.54 OR 654¢

20 = OTHER

21 = 54 OR $.54¢

23 = 654

77 = I DON'T KNOW.

88 = NO RESPONSE

SCORING GUIDE: PART E

Categories are listed below.

PART E:

11 = $.81

12 = .81

13 = 81¢

15 = $9.78, 9.78 OR 978¢

20 = OTHER

21 = 81 OR $.81¢

23 = 978

77 = I DON'T KNOW.

99 = NO RESPONSE

Which one of the following is a quadratic equation?

- ⬭ $3x^3 + 4x^2 = 8$
- ⬬ $x^2 + 7x + 9 = 0$
- ⬭ $ax + b = c$
- ⬭ $3x + 46 = 17$

⬭ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RB10211

NAEP #: 5-B10211-92D-3

Content Objective: B. Variables and Relationships

Process Objective: Knowledge

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 17
Package-Exercise: 08-23

TOTAL TIME: (in seconds) 17
18

$$ax + b = c + 2$$

Solve this equation for x.

ANSWER _____

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RB22325

NAEP #: 5-B22325-92D-3

Content Objective: B. Variables and Relatonships

Process Objective: Skill in Manipulating

Exercise Type: Open-ended
Stimulus Type: Text/Tape

Overlap: 17
Package-Exercise: 09-35

TOTAL TIME: (in seconds) 17
30

5-B22325-92D-3
SCORING GUIDE

ategories are listed below.

1 = $X = \frac{C + 2 - B}{A}$ , (C + 2 - B) DIVIDED BY A OR EQUIVALENT

0 = OTHER

1 = PARTIAL MANIPULATION, CORRECTLY DONE, NOT FINISHED SUCH AS:
$X + B/A = \frac{C + 2}{2}$, $AX = C + 2 - B$ OR $AX + B - C = 2$

2 = 2 OR X = 2

3 = 1 OR X = 1

4 = $\frac{C + 2}{A + B}$

5 = $C + 2 - B/A = X$ OR $-B/A + C + 2 = X$

7 = I DON'T KNOW.

8 = NO RESPONSE

If x + 3 is equal to or greater than nine, then x must be equal to or greater than what number?

ANSWER _____

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RB23025

NAEP #: 5-H11025-43D-23

Content Objective: B. Variables and Relationships

Process Objective: Skill in Manipulating

Exercise Type: Open-ended
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 09-40 | 17 / 11-04 |
| TOTAL TIME: (in seconds) | 13 / 62 | 17 / 59 |

5-B23025-43D-2,3
5-H11025-2,3
SCORING GUIDE

Categories are listed below.

11 = 6

12 = 6 OR LARGER, 6 OR GREATER

20 = OTHER, (6 + 3) OR 9 + 3 = 12

21 = (6, 7, 8, 9,...), 6, 7,..., 6..., 6 OR 7

22 = 9, 9 OR MORE, (9, 10, 11,...) OR 9, 10, 11...

23 = 7, (7, 8, 9...) OR 7, 8, 9...

24 = 12, 12 OR MORE, (12, 13,...) OR 12, 13, 14...

25 = 3, 3 OR MORE OR (3, 4, 5...)

26 = NUMBER GREATER THAN SIX OTHER THAN CATEGORIES 22, 23 OR 24

27 = GREATER THAN 6

77 = I DON'T KNOW.

88 = NO RESPONSE

Dick drove his parents' car from his house to his grandfather's farm at 40 mph. He returned by bicycle at 8 mph. If the entire trip took 3 hours, how far is it from his house to his grandfather's farm?

ANSWER _____

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RB25142

NAEP #: 5-B25142-92D-3

Content Objective: B. Variables and Relationships

Process Objective: Applications of Routine Problems

Exercise Type: Open-ended
Stimulus Type: Text/Tape

Overlap: 17
Package-Exercise: 07-20

TOTAL TIME: (in seconds) 17
108

5-B25142-92D-3
SCORING GUIDE

Categories are listed below.

11 = 20 MILES OR 20

20 = OTHER

21 = 60 OR 12

22 = 120 OR ATTEMPTED 40 X 3

23 = 24 OR ATTEMPTED 8 X 3

24 = 48, 51 OR ATTEMPTED 40 + 8 OR 40 + 8 + 3

25 = 5 OR ATTEMPTED 40 DIVIDED BY 8

26 = 144 OR ATTEMPTED (40 + 8) X 3

27 = WROTE ONE OF THE FOLLOWING EQUATIONS: $X = 40Y$, $X = 8(3 - Y)$, $X + Y = 3$, $40X = 8Y$, OR OTHER INCORRECT EQUATIONS

28 = WROTE CORRECT EQUATION OR PAIR OF EQUATIONS WITH NO OR WRONG ANSWER; E.G., $\frac{X}{40} + \frac{X}{8} = 3$, $x = 40Y$ AND $X = 8(3 - Y)$,

$X + Y = 3$ AND $40X = 8Y$, $40X = 8(3 - X)$ OR $40(3 - X) = 8X$

29 = 1/2, 2 1/2, 1/2 AND 2 1/2 WITH NO WORK OR WORK OTHER THAN CATEGORY 28

77 = I DON'T KNOW.

88 = NO RESPONSE

$144 = \square \times 8$

What number should go in the $\square$ to make this number sentence TRUE?

ANSWER _____

STOP

DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RB25625

NAEP #: 5-B25625-92D-2

Content Objective: B. Variables and Relationships

Process Objective: Skill in Manipulating

Exercise Type: Open-ended
Stimulus Type: Text/Tape

Overlap: 13
Package-Exercise: 13-31

TOTAL TIME: (in seconds) 13
29

5-B25625-92D-2

SCORING GUIDE

Categories are listed below.

11 = 18

20 = OTHER

21 = ATTEMPTED 144 DIVIDED BY 8 WITH NO OR WRONG ANSWER

22 = 1152 OR ATTEMPTED 144 X 8

23 = 152 OR ATTEMPTED 144 + 8

24 = 136 OR ATTEMPTED 144 - 8

77 = I DON'T KNOW.

88 = NO RESPONSE

A. $x^5 \cdot x^7 =$

- ⬭ $x^{-2}$
- ⬭ $x^2$
- ⬬ $x^{12}$
- ⬭ $x^{35}$
- ⬭ $12x$
- ⬭ $35x$

⬭ I don't know.

B. $\frac{x^5}{x^{15}} =$

- ⬭ $x^{\frac{1}{3}}$
- ⬭ $x^{-3}$
- ⬬ $x^{-10}$
- ⬭ $x^{10}$
- ⬭ $x^{20}$
- ⬭ $\frac{1}{3}$
- ⬭ $\frac{1}{3}x$

⬭ I don't know.

200

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RB30125

NAEP #: 5-B30125-92D-3

Content Objective: B. Variables and Relationships

Process Objective: Skill in Manipulating

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 17
Package-Exercise: 09-27

TOTAL TIME: (in seconds) 17
42

| a | b |
|---|---|
| 1 | 6 |
| 2 | 8 |
| 3 | 10 |
| 4 | 12 |

Which rule fits this table?

- ○ b = (3 × a) + 3
- ○ b = (2 × a) + 3
- ○ b = (3 × a) + 2
- ● b = (2 × a) + 4

- ○ I don't know.

DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Report #: RB40847

NAEP #: 5-B40847-92D-2

Content Objective: B. Variables and Relationships

Process Objective: Applications of Routine Problems

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 13
Package-Exercise: 10-13

TOTAL TIME: (in seconds) 13
42

Which of the following numbers could be written in the form $4m+3$ where m is a counting number?

- ⬭ 25
- ⬭ 28
- ⬬ 31
- ⬭ 80

- ⬭ I don't know.



STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RB40932

NAEP #: 5-B40932-92D-3

Content Objective: B. Variables and Relationships

Process Objective: Applications of Non-Routine Problems

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 17
Package-Exercise: 13-16

TOTAL TIME: (in seconds) 17
48

If $y = \frac{5}{x}$, what happens to y as x increases?

- y increases.
- y decreases.
- y remains the same.

- I don't know.

STOP

DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RB41832

NAEP #: 5-B41832-92D-3

Content Objective: B. Variables and Relationships

Process Objective: Understanding

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 17
Package-Exercise: 09-15

TOTAL TIME: (in seconds) 17
34

In a coordinate plane a rectangle has vertices at the points (-2, 3), (-2, -2), (12, -2) and (12, 3). What is the area of this rectangle?

- ○ 38
- ○ 50
- ● 70
- ○ 84

- ○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RB51223

NAEP #: 5-B51223-92D-3

Content Objective: B. Variables and Relationships

Process Objective: Applications of Routine Problems

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 17
Package-Exercise: 09-23

TOTAL TIME: (in seconds) 17
84

Ed weighs more than Linda and is shorter than Peter. Peter weighs less than Linda and is also shorter than Linda.

A. Who is the tallest?

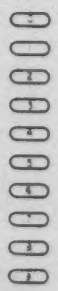
- ⬭ Ed
- ⬭ Peter
- ⬬ Linda

- ⬭ I don't know.

B. Who is the heaviest?

- ⬬ Ed
- ⬭ Peter
- ⬭ Linda

- ⬭ I don't know.



DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Report #: RB70246

NAEP #: 5-B70246-D1D-2

Content Objective: B. Variables and Relationships

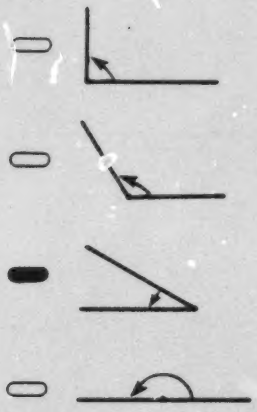
Process Objective: Applications of Reasoning and Judgment

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 13
Package-Exercise: 14-20

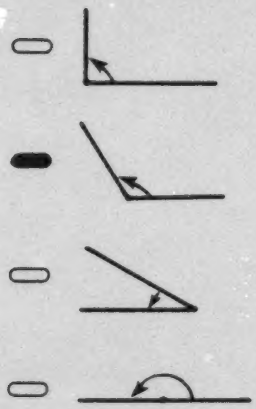
TOTAL TIME: (in seconds) 13
68

A. Which figure shows an acute angle?



I don't know.

B. Which figure shows an obtuse angle?



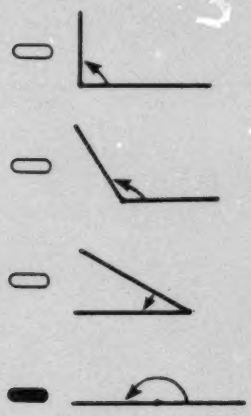
I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

212

(Continued)

C. Which figure shows a straight angle?



I don't know.

DO NOT CONTINUE
UNTIL TOLD TO DO SO

Report #: RC10411

NAEP #: 5-C10411-92D-2

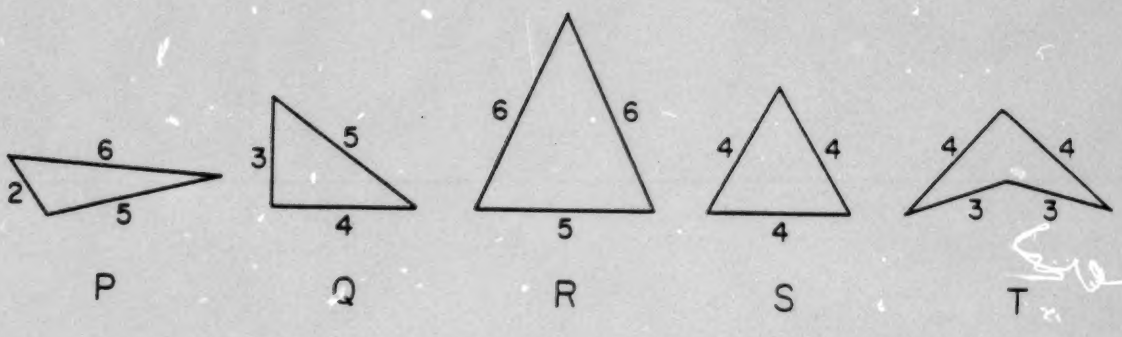
Content Objective: C. Shape, Size and Position

Process Objective: Knowledge

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 13
Package-Exercise: 12-32

TOTAL TIME: (in seconds) 13
35




Which figures show a triangle?

- ⬭ Figures P and Q only
- ⬭ Figures P, R and S only
- ⬭ All of the figures
- ⬬ All except Figure T
- ⬭ I don't know.

STOP

DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RC12611

NAEP #: 5-C12611-92D-12

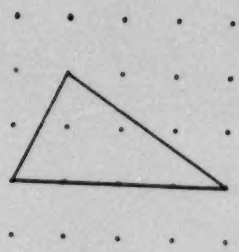
Content Objective: C. Shape, Size and Position

Process Objective: Number and Numeration

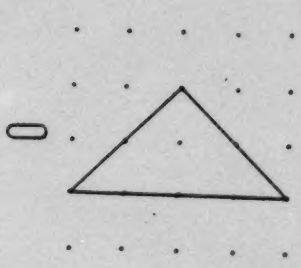
Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

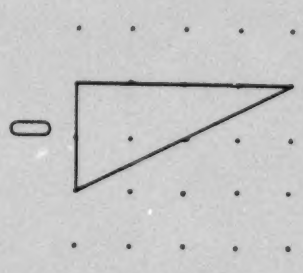
Overlap: 9
Package-Exercise: 01-14

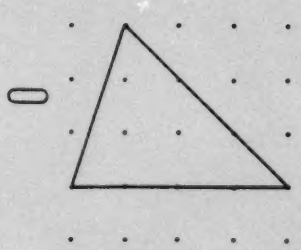
TOTAL TIME: (in seconds) 9
35

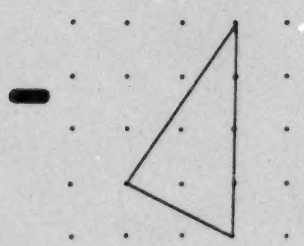


Suppose you cut out the above triangle. On top of which triangle shown below would it fit exactly? Fill in the oval beside the triangle you choose.









I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RC20432

NAEP #: 5-C20432-92D-123

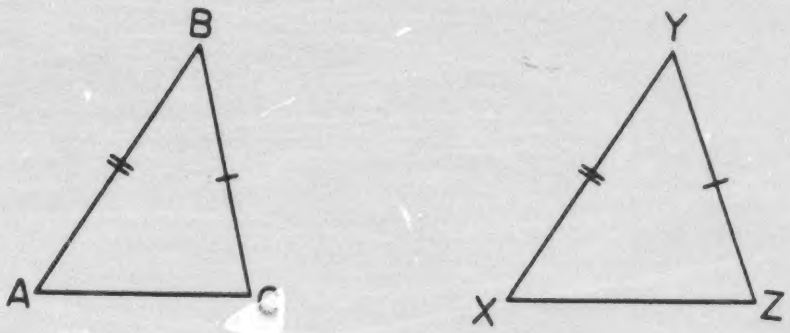
Content Objective: C. Shape, Size and Position

Process Objective: Skill in Manipulating

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | | |
|---|---|---|---|
| Overlap: Package-Exercise: | 9 / 04-27 | 13 / 08-16 | 17 / 09-28 |
| TOTAL TIME: (in seconds) | 9 / 41 | 13 / 31 | 17 / 28 |

In triangles ABC and XYZ, side $\overline{AB}$ is congruent to side $\overline{XY}$, and side $\overline{BC}$ is congruent to side $\overline{YZ}$. Which statement would NOT guarantee that the triangles are congruent?




- ⬭ Angle A is congruent to angle X, and angle C is congruent to angle Z.
- ⬭ Angle B is congruent to angle Y.
- ⬬ Angle A is congruent to angle X.
- ⬭ Side $\overline{AC}$ is congruent to side $\overline{XZ}$.

- ⬭ I don't know.

DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RC20932

NAEP #: 5-C20932-92D-23

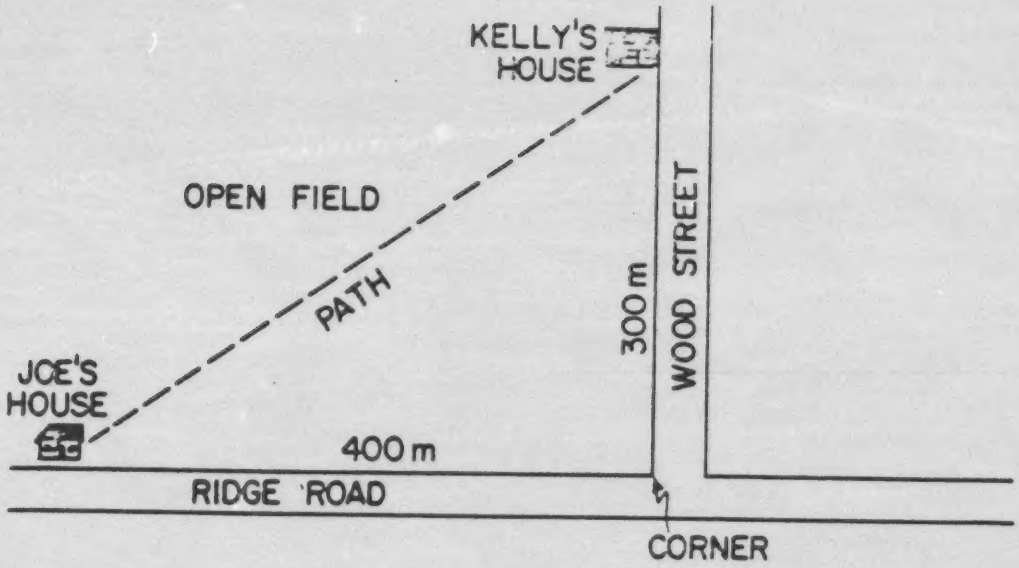
Content Objective: C. Shape, Size and Position

Process Objective: 3. Understanding

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 13-07 | 17 / 11-17 |
| TOTAL TIME: (in seconds) | 13 / 72 | 17 / 65 |

220




Joe's house on Ridge Road is 400 meters from the corner of Ridge Road and Wood Street. Kelly's house is on Wood Street and is 300 meters from the same corner. When Joe goes to Kelly's house, he walks through the open field. How many meters does he walk?

- ⬭ 450
- ⬬ 500
- ⬭ 550
- ⬭ 600

- ⬭ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RC40542

NAEP #: 5-C40542-92D-23

Content Objective: C. Shape, Size and Position

Process Objective: Applications of Routine Problems

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 07-15 | 17 / 07-13 |
| TOTAL TIME: (in seconds) | 13 / 59 | 17 / 59 |

An ALTITUDE of a triangle always

- ⬭ bisects an angle.
- ⬭ bisects a side.
- ⬬ is perpendicular to a side or its extension.
- ⬭ divides the triangle into two congruent triangles.

- ⬭ I don't know.



STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RC41111

NAEP #: 5-C41111-92D-3

Content Objective: C. Shape, Size and Position

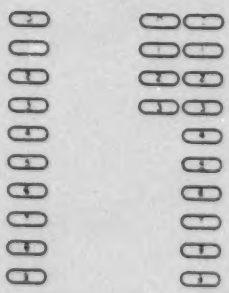
Process Objective: Knowledge

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 17
Package-Exercise: 12-23

TOTAL TIME: (in seconds) 17
26

Construct a line perpendicular to line $\ell$ at point P. Use the ruler as a straightedge and the compass. Be sure to show your work.



DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Report #: RC60824

NAEP #: 5-C60824-92D-3

Content Objective: C. Shape, Size and Position

Process Objective: Skill in Manipulating

Exercise Type: Open-ended
Stimulus Type: Text/Tape

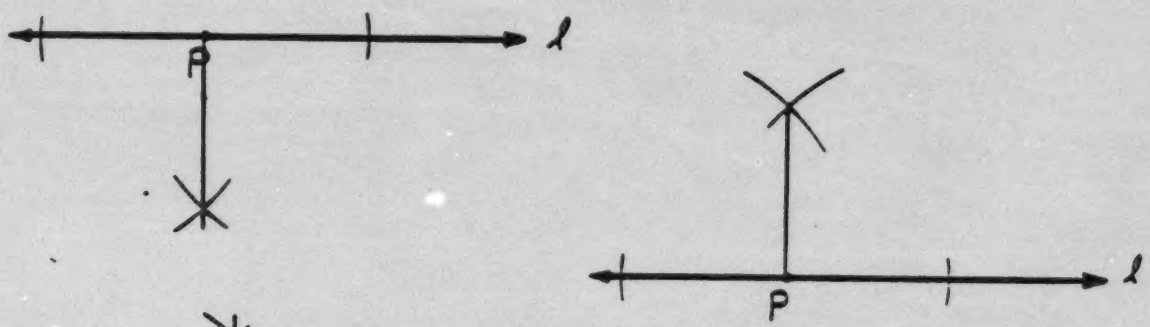
Overlap: 17
Package-Exercise: 10-34

TOTAL TIME: (in seconds) 17
61

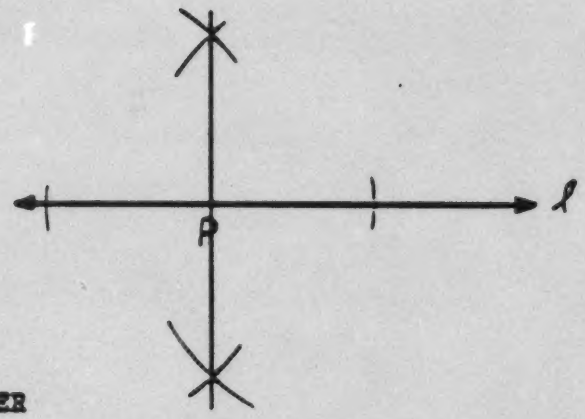
5-C60824-92D-3
**SCORING GUIDE**

ategories are listed below.

1 = ARCS MUST BE EQUIVALENT FROM POINT P.




2 =




0 = OTHER

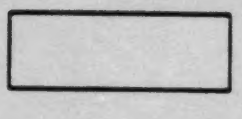
1 = DREW A LINE APPEARING PERPENDICULAR TO L AT POINT P, WITH NO CONSTRUCTION ARCS SHOWN.

2 = DREW EITHER A CIRCLE, SEMI-CIRCLES, QUARTER CIRCLES, OR OTHER PARTS WITH POINT P AS THE CENTER, OR WITH THE LINE END POINTS AS CENTERS. NO PARALLEL LINE.

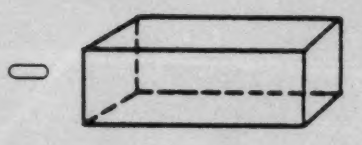
3 = CONSTRUCTED A PERPENDICULAR TO LINE L BUT NOT THROUGH POINT P. MOST LIKELY THE ARCS WILL BE CENTERED AT THE ENDS OF THE LINE SEGMENT.

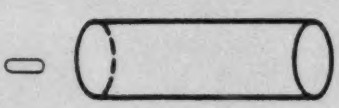
7 = I DON'T KNOW.

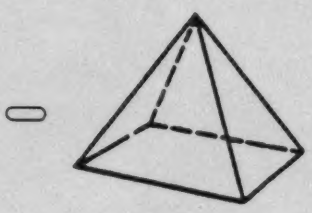
8 = NO RESPONSE



Shown above is the shape of a face obtained by cutting one of the solids below once. Which one of the following could NOT be the solids? Fill in the oval beside the one you choose.







I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RC71224

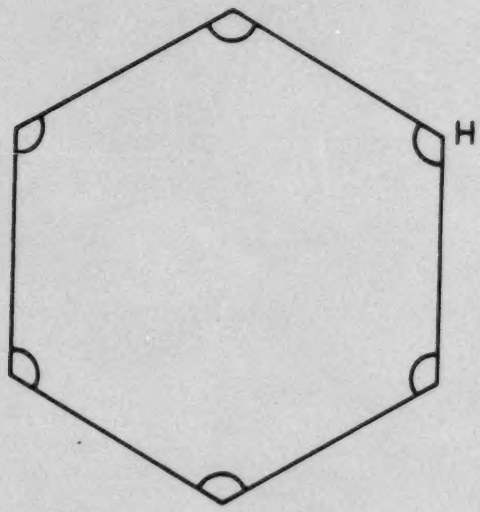
NAEP #: 5-C71224-92D-23

Content Objective: C. Shape, Size and Position

Process Objective: Skill in Manipulating

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 09-08 | 17 08-17 |
| TOTAL TIME: (in seconds) | 13 33 | 17 24 |




The figure above is a regular hexagon. What is the measure of angle H?

- ⬭ 60°
- ⬭ 90°
- ⬭ 115°
- ⬬ 120°
- ⬭ 150°

- ⬭ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

230

Report #: RC80442

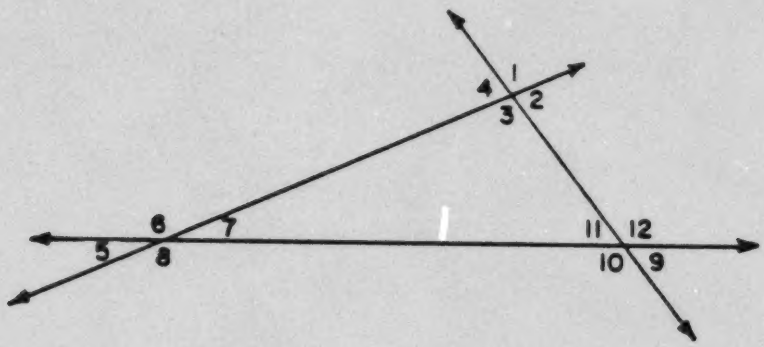
NAEP #: 5-C80442-92D-23

Content Objective: C. Shape, Size and Position

Process Objective: Applications of Routine Problems

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: | 13 | 17 |
| Package-Exercise: | 14-28 | 13-05 |
| TOTAL TIME: (in seconds) | 13 | 17 |
| | 46 | 43 |




What is the sum of the measures of angles 1, 3, 5, 7, 9, 11?

- ⬭ 180°
- ⬬ 360°
- ⬭ 720°
- ⬭ Not enough information given

- ⬭ I don't know.

232

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RC81143

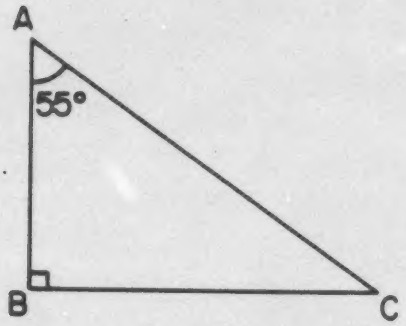
NAEP #: 5-C81143-92D-23

Content Objective: C. Shape, Size and Position

Process Objective: Applications of Routine Problems

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | 13 | 17 |
|---|---|---|
| Overlap: Package-Exercise: | 08-28 | 12-31 |
| TOTAL TIME: (in seconds) | 13<br>53 | 17<br>42 |




ABC is a right triangle. What is the measure of $\angle$ ACB?

- 35°
- 45°
- 55°
- 90°
- Not enough information given

- I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

234

Report #: RC82132

NAEP #: 5-C82132-92D-23

Content Objective: C. Shape, Size and Position

Process Objective: Applications of Routine Problems

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | 13 | 17 |
|---|---|---|
| Overlap: Package-Exercise: | 10-12 | 08-06 |
| TOTAL TIME: (in seconds) | 13 | 17 |
| | 31 | 25 |

A. How many pints are in one quart?

- [x] 2
- [ ] 4
- [ ] 6
- [ ] 8

- [ ] I don't know.

B. How many quarts are in one gallon?

- [ ] 2
- [x] 4
- [ ] 6
- [ ] 8

- [ ] I don't know.

C. How many ounces are in one pound?

- [ ] 10
- [ ] 12
- [x] 16
- [ ] 24
- [ ] 32

- [ ] I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

D. How many feet are in one yard?

- ● 3
- ○ 9
- ○ 12
- ○ 36

- ○ I don't know.

E. How many inches are in one foot?

- ○ 3
- ○ 10
- ● 12
- ○ 36

- ○ I don't know.

DO NOT CONTINUE
UNTIL TOLD TO DO SO

Report #: RD11211

NAEP #: 5-D11211-92D-23

Content Objective: D. Measurement

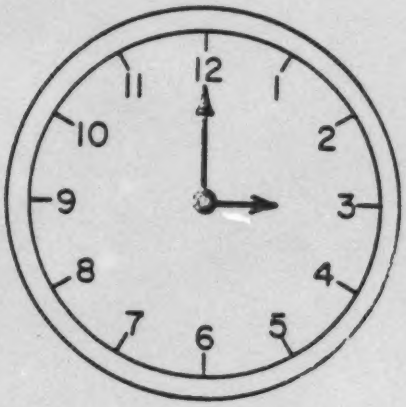
Process Objective: Knowledge

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | 13 | 17 |
|---|---|---|
| Overlap: Package-Exercise: | 07-09 | 09-13 |
| TOTAL TIME: (in seconds) | 13 | 17 |
| | 53 | 46 |

What time is shown on each clock?

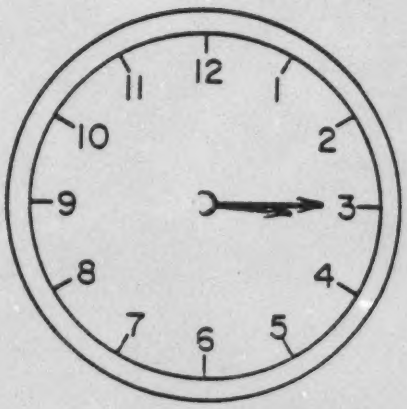
A.




- ⬭ 12:00
- ⬭ 12:03
- ▬ 3:00
- ⬭ 3:12

⬭ I don't know.

B.

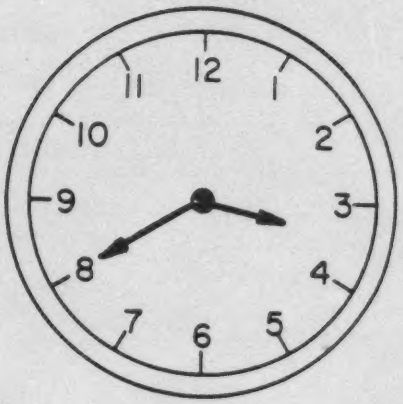



- ⬭ 3:00
- ⬭ 3:03
- ▬ 3:15
- ⬭ 3:20

⬭ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

C.




- 3:20
- 3:40
- 4:08
- 8:20

- I don't know.

240

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RD21422

NAEP #: 5-D21422-92D-1

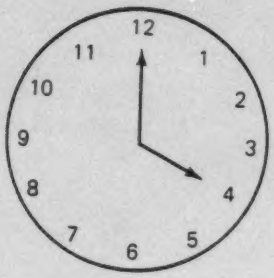
Content Objective: D. Measurement

Process Objective: Skill

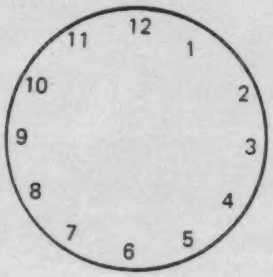
Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 9
Package-Exercise: 03-18

TOTAL TIME: (in seconds) 9
38




Draw hands on the clock below to show how it will look one hour and ten minutes later than the time shown on the clock above.






STOP

DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Report #: RD21722

NAEP #: 5-E11006-43D-1

Content Objective: D. Measurement

Process Objective: Skill

Exercise Type: Open-ended
Stimulus Type: Text/Tape

Overlap: 9
Package-Exercise: 04-12

TOTAL TIME: (in seconds) 9
34

243

1982-82 N0412
1977-78 N0310
1972-73 N0334

5-D21722-43D-1
5-E11006-1

SCORING GUIDE

Categories are listed below.

11 = 5:10

20 = OTHER

21 = 2:25

22 = 4:10 OR 2:20

23 = 1:10 OR 2:05

24 = 1:30 OR 6:05

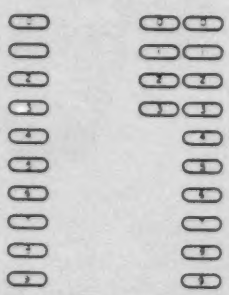
25 = 12:10 OR 2:00

26 = INDISTINGUISHABLE BETWEEN 5:10 OR 2:25

77 = I DON'T KNOW.

88 = NO RESPONSE

Use the ruler to draw a line segment 7 centimeters long.



DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Report #: RD30122

NAEP #: 5-D30122-92D-12

Content Objective: D. Measurement

Process Objective: Skill

Exercise Type: Open-ended
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 9 / 05-34 | 13 / 10-41 |
| TOTAL TIME: (in seconds) | 9 / 32 | 13 / 29 |

5-D30122-92D-1,2
SCORING GUIDE

Categories are listed below.

11 = LINE SEGMENT 6.7 TO 7.3 CM LONG

20 = OTHER -- 6.4 OR ANY GEOMETRIC SHAPE

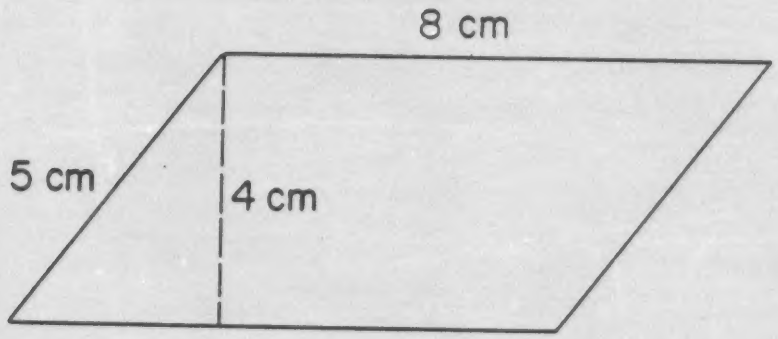
21 = LINE SEGMENT 6.5 TO 7.5 CM LONG OTHER THAN CATEGORY 11

22 = LINE SEGMENT 5.7 TO 6.3 CM LONG

23 = LINE SEGMENT 3.3 TO 3.7 INCLUDING 3.3 AND 3.7

77 = I DON'T KNOW.

88 = NO RESPONSE




The dotted line is an altitude of the parallelogram. What is the area of the parallelogram?

ANSWER _____ square cm

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RD40722

NAEP #: 5-D40722-92D-3

Content Objective: D. Measurement

Process Objective: Skill

Exercise Type: Open-ended
Stimulus Type: Text/Tape

Overlap: 17
Package-Exercise: 09-18

TOTAL TIME: (in seconds) 17
37

5-D40722-92D-3

SCORING GUIDE

Categories are listed below.

11 = 32, 32 SQUARE CM OR $CM^2$

20 = OTHER

21 = 16

22 = 17

23 = 26

24 = 30

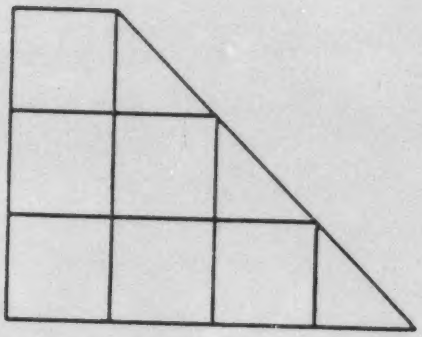
25 = 40

26 = 160

27 = 20

77 = I DON'T KNOW.

88 = NO RESPONSE



What is the area of this figure?

- 6 units
- $7\frac{1}{2}$ units
- $8\frac{1}{2}$ units
- 9 units
- 12 units
- I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RD50432

NAEP #: 5-D50432-92D-23

Content Objective: D. Measurement

Process Objective: Skill

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | 13 | 17 |
|---|---|---|
| Overlap: Package-Exercise: | 07-18 | 09-10 |
| TOTAL TIME: (in seconds) | 13 | 17 |
| | 33 | 27 |

The length of a table measured to the nearest inch is 42 inches. What does this mean about the length of the table?

- ⬭ It is exactly 42 inches.
- ⬭ It may be anywhere between 41 inches and 43 inches.
- ⬬ It may be anywhere between $41\frac{1}{2}$ inches and $42\frac{1}{2}$ inches.
- ⬭ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RD70232

NAEP #: 5-D70232-92D-3

Content Objective: D. Measurement

Process Objective: Understanding

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

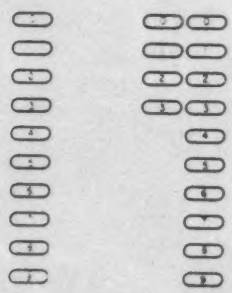
Overlap: 17
Package-Exercise: 11-16

TOTAL TIME: (in seconds) 17
30

Mary plans to have a party on Thursday, three weeks from December 2nd. On what DATE does she plan to have it?

| DECEMBER | | | | | | |
|---|---|---|---|---|---|---|
| S | M | T | W | T | F | S |
| | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 | |

ANSWER _____



DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Report #: RD90141

NAEP #: 5-A21013-43D-123

Content Objective: D. Measurement

Process Objective: Skill

Exercise Type: Open-ended
Stimulus Type: Text/Tape

| | 9 | 13 | 17 |
|---|---|---|---|
| Overlap: Package-Exercise: | 05-12 | 07-03 | 10-01 |
| TOTAL TIME: (in seconds) | 34 | 35 | 35 |

5-D90141-43D-1,2,3
5-A21013-1,2,3
SCORING GUIDE

Categories are listed below.

11 = DECEMBER 23RD, 23RD OR 23

20 = OTHER

21 = THURSDAY

22 = DECEMBER 24, 24TH OR 24

23 = DECEMBER 16, 16TH OR 16

24 = NOVEMBER 11

77 = I DON'T KNOW.

88 = NO RESPONSE

A pound of grass seed will cover an area of 400 square feet. How many pounds of grass seed are needed to cover a rectangular yard that is 120 feet long and 90 feet wide?

ANSWER _____

258

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RD91242

NAEP #: 5-D91242-92D-3

Content Objective: D. Measurement

Process Objective: Applications of Routine Problems

Exercise Type: Open-ended
Stimulus Type: Text/Tape

Overlap: 17
Package-Exercise: 11-21

TOTAL TIME: (in seconds) 17
61

5-D91242-92D-3

SCORING GUIDE

Categories are listed below.

11 = 27 POUNDS, 27 LBS. OR 27

20 = OTHER

21 = 270 OR 2700 WITH OR WITHOUT UNITS (CATEGORY 26 TAKES PRECEDENCE)

22 = 10800 WITH OR WITHOUT UNITS OR ATTEMPTED 120 X 90

23 = 190 WITH OR WITHOUT UNITS OR ATTEMPTED 400 - (120 + 90)

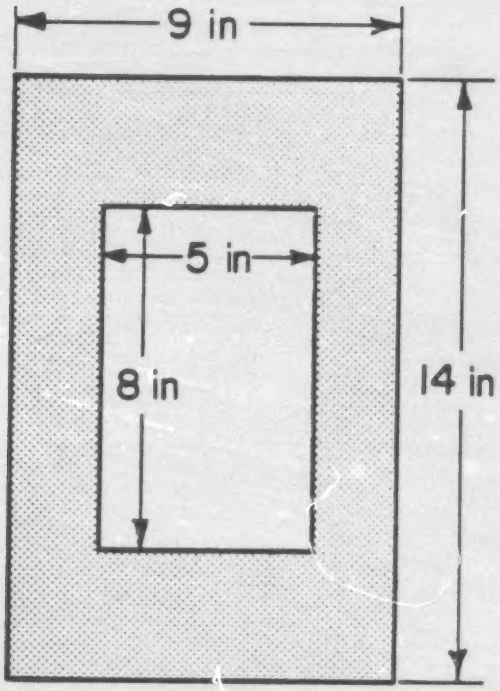
24 = 210 WITH OR WITHOUT UNITS OR ATTEMPTED 120 + 90

25 = 610 WITH OR WITHOUT UNITS OR ATTEMPTED 400 + 120 + 90

26 = 27 WITH WRONG UNIT OR ATTEMPTED (120 X 90) DIVIDED BY 400 OR (12 X 9) DIVIDED BY 4

77 = I DON'T KNOW.

88 = NO RESPONSE




What is the area of the shaded part of the figure?

ANSWER _____ square in.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

261

Report #: RD91342

NAEP #: 5-D91342-92D-23

Content Objective: D. Measurement

Process Objective: Applications of Routine Problems

Exercise Type: Open-ended
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 09-17 | 17 / 07-23 |
| TOTAL TIME: (in seconds) | 13 / 44 | 17 / 43 |

5-D91342-92D-2,3
SCORING GUIDE

Categories are listed below.

11 = 86 OR 86 SQ. IN.

20 = OTHER

21 = 126 OR ATTEMPTED 9 X 14

22 = 40 OR ATTEMPTED 5 X 8

23 = 166 OR ATTEMPTED (9 X 14) + (5 X 8)

24 = 10, 20 OR ATTEMPTED TO FIND DIFFERENCE OF PERIMETERS OR SEMIPERIMETERS

25 = 36, 72 OR ATTEMPTED TO FIND SUM OF PERIMETERS OR SEMIPERIMETERS

26 = 24 OR ATTEMPTED 4 X 6 OR (9 - 5) X (14 - 8)

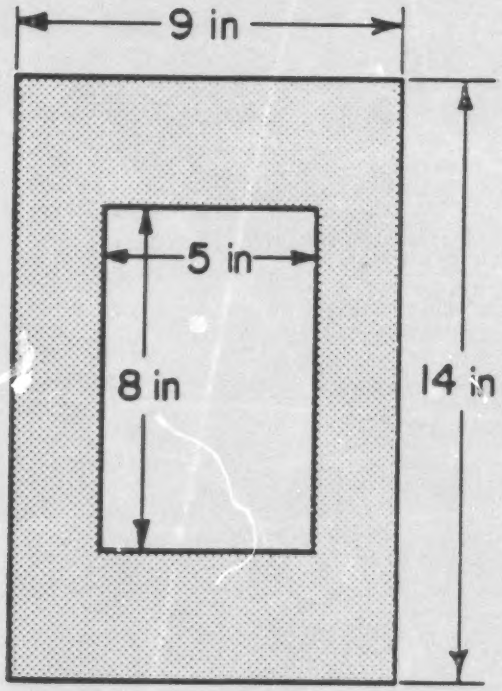
27 = 46, 23 OR ATTEMPTED TO FIND PERIMETER OR SEMIPERIMETER OF LARGE RECTANGLE; 13, 26 OR ATTEMPTED TO FIND PERIMETER OR SEMIPERIMETER OF SMALL RECTANGLE

28 = 5040 OR ATTEMPTED 9 X 14 X 5 X 8

29 = ATTEMPTED (9 X 14) - (5 X 8) WITH NO OR WRONG ANSWER

77 = I DON'T KNOW.

88 = NO RESPONSE




What is the area of the shaded part of the figure?

ANSWER _____ square in.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Report #: RD91342K

NAEP #: 5-D91342K-92D-23

Content Objective: F. Technology

Process Objective: Hand Held Calculator

Exercise Type: Open-ended
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 11-28 | 17 / 14-29 |
| TOTAL TIME: (in seconds) | 13 / 43 | 17 / 43 |

5-D91342K92D-23
SCORING GUIDE

Categories are listed below.

11 = 86 OR 86 SQ. IN.

[illegible] = OTHER

21 = 126 OR ATTEMPTED 9 X 14

22 = 40 OR ATTEMPTED 5 X 8

23 = 166 OR ATTEMPTED (9 X 14) + (5 X 8)

24 = 10, 20 OR ATTEMPTED TO FIND DIFFERENCE OF PERIMETERS OR SEMIPERIMETERS

25 = 36, 72 OR ATTEMPTED TO FIND SUM OF PERIMETERS OR SEMIPERIMETERS

26 = 24 OR ATTEMPTED 4 X 6 OR (9 - 5) X (14 - 8)

27 = 46, 23 OR ATTEMPTED TO FIND PERIMETER OR SEMIPERIMETER OF LARGE RECTANGLE; 13, 26 OR ATTEMPTED TO FIND PERIMETER OR SEMIPERIMETER OF SMALL RECTANGLE

28 = 5040 OR ATTEMPTED 9 X 14 X 5 X 8

29 = ATTEMPTED (9 X 14) - (5 X 8) WITH NO OR WRONG ANSWER

77 = I DON'T KNOW.

88 = NO RESPONSE

How many pint-sized containers could be filled from a half-gallon carton of milk?

ANSWER _____

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

267

Report #: RD92141

NAEP #: 5-E15003-43D-23

Content Objective: D. Measurement

Process Objective: Skill

Exercise Type: Open-ended
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 10-05 | 17 / 13-37 |
| TOTAL TIME: (in seconds) | 13 / 36 | 17 / 31 |

1981-82 T1005 S1337
1977-78 T0804 S0203
1972-73 T0808 S0208

5-D92141-43D-2,3
5-E15003-2,3
SCORING GUIDE

Categories are listed below.

11 = 4, 4 CONTAINERS OR 4 PINTS

20 = OTHER; 2, 8 OR 16 WITH WRONG UNIT

21 = 2, 2 CONTAINERS OR 2 PINTS

22 = 8, 8 CONTAINERS OR 8 PINTS

23 = 16, 16 CONTAINERS OR 16 PINTS

24 = 4 WITH WRONG UNIT

77 = I DON'T KNOW.

88 = NO RESPONSE

Five people belong to the Tiger Club. No person may hold two offices. How many ways can the club elect a president and secretary?

- ⬭ 5
- ⬭ 9
- ⬭ 10
- ⬭ 15
- ⬬ 20

⬭ I don't know.

270

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RE10543

NAEP #: 5-E10543-92D-23

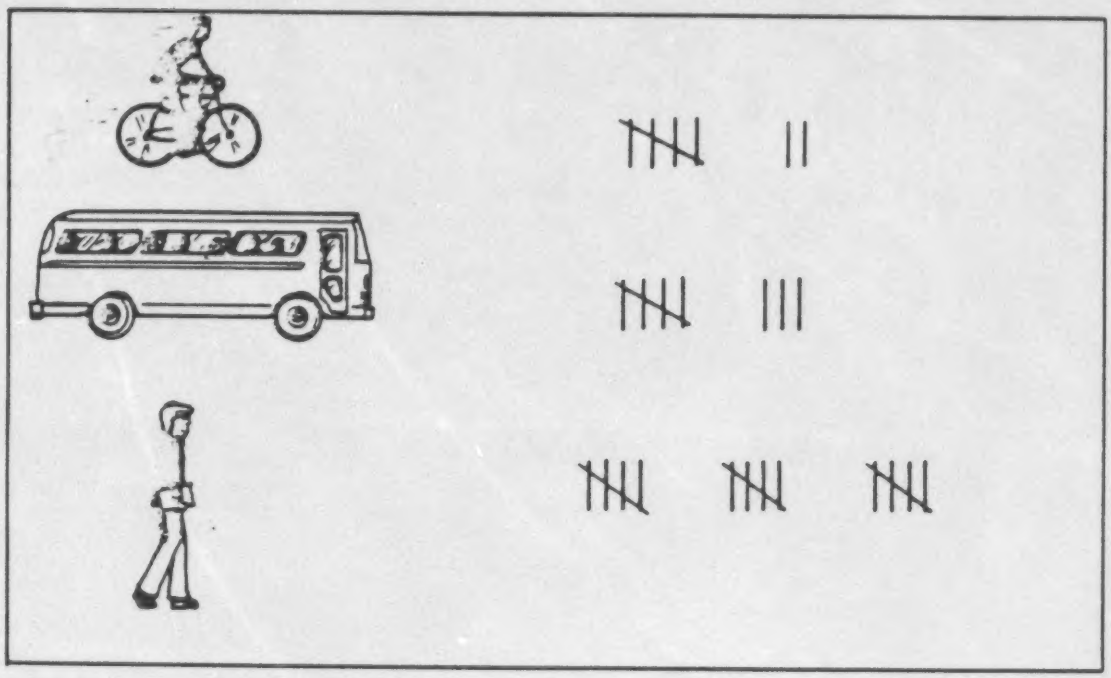
Content Objective: E. Probability and Statistics

Process Objective: Applications of Routine Problems

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 / 13-19 | 17 / 13-17 |
| TOTAL TIME: (in seconds) | 13 / 44 | 17 / 45 |

The students in Mrs. Smith's class made a chart to show how they come to school. Each student made a mark beside one of the pictures to show how he or she comes to school. Sally is a student in Mrs. Smith's class.



Which one of the following statements is correct?

- ⬭ It is more likely that Sally rides a bike than that she walks to school.
- ⬬ It is more likely that Sally walks than that she takes the bus to school.
- ⬭ It is more likely that Sally takes the bus than that she walks to school.
- ⬭ It is more likely that Sally rides her bike than that she takes the bus to school.
- ⬭ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

272

Report #: RE11246

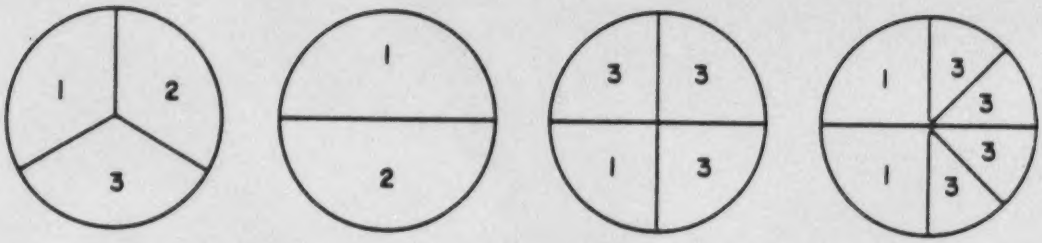
NAEP #: 5-E11246-92D-12

Content Objective: E. Probability and Statistics

Process Objective: Applications of Reasoning and Judgement

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 9 / 07-09 | 13 / 13-24 |
| TOTAL TIME: (in seconds) | 9 / 62 | 13 / 80 |




A. . You WIN the game if 3 is spun. Which spinner would you choose?

- ⬭ P
- ⬭ Q
- ⬬ R
- ⬭ S

- ⬭ I don't know.

B. Suppose you LOSE the game if 3 is spun. Which spinner would you choose?

- ⬭ P
- ⬬ Q
- ⬭ R
- ⬭ S

- ⬭ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

C. Suppose you LOSE the game if 1 is spun. Which spinner would you choose?

- ⬭ P
- ⬭ Q
- ⬬ R
- ⬭ S

- ⬭ I don't know.

275

STOP

DO NOT CONTINUE UNTIL TOLD TO DO SO.

| | | | |
|---|---|---|---|
| Report #: | RE11532 | | |
| NAEP #: | 5-E11532-92D-12 | | |
| Content Objective: | E. Probability and Statistics | | |
| Process Objective: | Understanding | | |
| Exercise Type: | Multiple-choice | | |
| Stimulus Type: | Text/Tape | | |
| Overlap: Package-Exercise: | | 9 02-16 | 13 08-38 |
| TOTAL TIME: (in seconds) | | 9 101 | 13 82 |

Suppose you are playing a game. If you toss a coin and it lands tails you win $3. but if it lands heads you lose $2.

A. If you toss the coin just one time you will

- ⬭ probably win money.
- ⬬ be equally likely to win or lose money.
- ⬭ probably lose money.

- ⬭ I don't know.

B. If you toss the coin 100 times you will

- ⬬ probably win more money than you lose.
- ⬭ be equally likely to win or lose money.
- ⬭ probably lose more money than you win.

- ⬭ I don't know.

277

DO NOT CONTINUE
UNTIL TOLD TO DO SO

Report #: RE12646

NAEP #: 5-E12646-92D-23

Content Objective: E. Probability and Statistics

Process Objective: Applications of Reasoning and Judgment

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | |
|---|---|---|
| Overlap: Package-Exercise: | 13 07-39 | 17 08-05 |
| TOTAL TIME: (in seconds) | 13 69 | 17 67 |

Dora traveled 20 miles in four hours. What was her average speed in miles per hour?

- ⬭ 4 mph
- ⬬ 5 mph
- ⬭ 16 mph
- ⬭ 20 mph
- ⬭ 24 mph

- ⬭ I don't know.

279

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Report #: RE21041

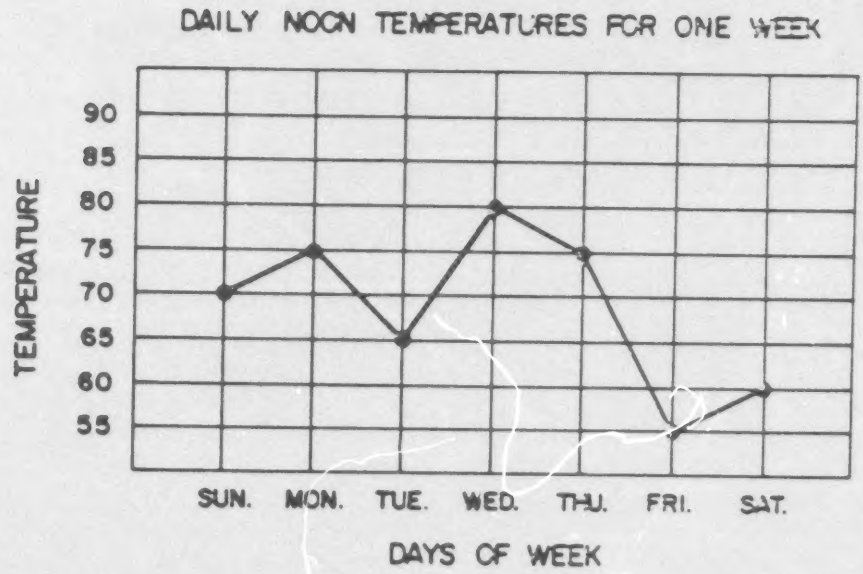
NAEP #: 5-E21041-92D-123

Content Objective: E. Probability and Statistics

Process Objective: Applicatons of Routine Problems

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | | |
|---|---|---|---|
| Overlap: Package-Exercise: | 9 07-20 | 13 07-21 | 17 08-04 |
| TOTAL TIME: (in seconds) | 9 36 | 13 22 | 17 22 |




A. Which day was the warmest at noon?

- ○ Sunday
- ○ Monday
- ○ Tuesday
- ● Wednesday
- ○ Thursday
- ○ Friday
- ○ Saturday

- ○ I don't know.

281

STOP

DO NOT CONTINUE UNTIL TOLD TO DO SO.

(Continued)

B. Which two days had the same noon temperature?

- ⬭ Tuesday and Friday
- ⬬ Monday and Thursday
- ⬭ Monday and Wednesday
- ⬭ Sunday and Saturday
- ⬭ Wednesday and Thursday

- ⬭ I don't know.

C. How many days was the noon temperature 70° or above?

- ⬭ 0
- ⬭ 1
- ⬭ 2
- ⬭ 3
- ⬬ 4
- ⬭ 5
- ⬭ 6
- ⬭ 7

- ⬭ I don't know.

282

STOP

DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RE30323

NAEP #: 5-E30323-92D-123

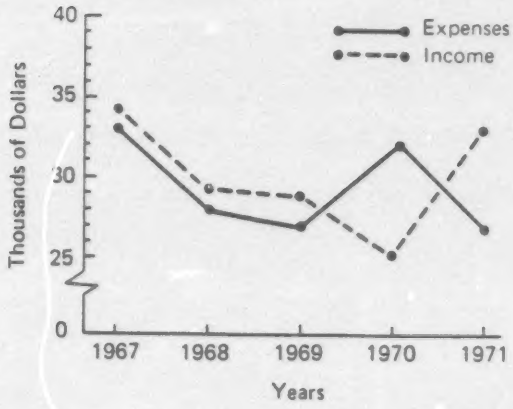
Content Objective: E. Probability and Statistics

Process Objective: Skill

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

| | | | |
|---|---|---|---|
| Overlap: Package-Exercise: | 9 01-24 | 13 09-01 | 17 10-11 |
| TOTAL TIME: (in seconds) | 9 86 | 13 73 | 17 62 |

Income and Expenses of Metro, Co. 1967-1971




According to the graph, in which year did the Metro Company make the largest dollar amount of profit?

- ○ 1967
- ○ 1968
- ○ 1969
- ○ 1970
- ● 1971

- ○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Report #: RE32723

NAEP #: 5-J30029-43D-3

Content Objective: E. Probability and Statistics

Process Objective: Skill

Exercise Type: Multiple-choice
Stimulus Type: Text/Tape

Overlap: 17
Package-Exercise: 08-31

TOTAL TIME: (in seconds) 17
48

# APPENDIX C

National and Modal Grade
P-Values for Correct Response
To Cognitive Exercises
1981-82
Assessment

PERCENT OF CORRECT RESPONSES FOR NATION AND MODAL GRADE BY AGE
1981-82 MATHEMATICS ASSESSMENT

| | | Age 9 | | Age 13 | | Age 17 | |
|---|---|---|---|---|---|---|---|
| | | National | Grade 4 | National | Grade 8 | National | Grade 11 |
| RA00944-2,3 | | | | 59.9 | 66.5 | 76.4 | 78.6 |
| RA01144-2,3 | | | | 71.6 | 76.1 | 84.7 | 86.5 |
| RA02444-2,3 | | | | 57.9 | 60.7 | 64.8 | 65.3 |
| RA02844-2,3 | | | | 31.3 | 35.8 | 53.9 | 55.9 |
| RA11111-3 | | | | | | 32.0 | 33.3 |
| RA11431-1 | A | 93.7 | 96.6 | | | | |
| | B | 94.6 | 97.5 | | | | |
| RA11832-1,2 | | 18.4 | 23.5 | 83.4 | 88.0 | | |
| RA12632-2,3 | A | | | 43.2 | 53.1 | 78.5 | 82.3 |
| | B | | | 32.4 | 40.4 | 62.2 | 66.3 |
| | C | | | 33.6 | 40.8 | 58.0 | 62.1 |
| RA14411-1,2 | A | 85.1 | 91.5 | 95.7 | 96.1 | | |
| | B | 90.2 | 94.8 | 97.1 | 97.5 | | |
| RA21841-2,3 | | | | 44.8 | 48.4 | 66.3 | 69.9 |
| RA24031-2,3 | A | | | 65.3 | 72.9 | 64.7 | 66.7 |
| | B | | | 37.0 | 42.4 | 32.8 | 34.5 |
| | C | | | 64.3 | 73.3 | 63.4 | 65.8 |
| RA24431-2,3 | A | | | 74.3 | 82.3 | 85.2 | 87.8 |
| | B | | | 67.8 | 76.8 | 83.2 | 86.4 |
| RA25432-1 | | 5.7 | 6.9 | | | | |
| RA25632-1 | | 19.5 | 25.8 | | | | |
| RA30731-1,2 | | 71.7 | 79.2 | 93.9 | 95.1 | | |
| RA32732-2,3 | A | | | 31.9 | 35.2 | 51.3 | 55.2 |
| | B | | | 12.8 | 14.9 | 32.6 | 34.9 |
| | C | | | 35.6 | 38.8 | 49.3 | 51.6 |
| RA32921-2 | A | | | 77.0 | 81.1 | | |
| | B | | | 90.7 | 93.9 | | |
| | C | | | 57.0 | 62.3 | | |
| RA32921K2 | A | | | 52.5 | 61.0 | | |
| | B | | | 75.8 | 84.1 | | |
| | C | | | 60.4 | 69.9 | | |
| RA34032-1,2,3 | | 18.8 | 21.2 | 56.6 | 60.5 | 68.9 | 71.8 |
| RA34342-1,2 | | 55.8 | 64.6 | 89.4 | 92.4 | | |
| RA35241-2,3 | | | | 54.7 | 62.8 | 74.1 | 78.8 |
| RA36341-2,3 | | | | 22.6 | 24.9 | 43.3 | 47.5 |
| RA36511-1 | A | 91.8 | 94.0 | | | | |
| | B | 87.1 | 91.5 | | | | |
| | C | 88.2 | 91.7 | | | | |
| | D | 78.9 | 85.8 | | | | |
| | E | 85.7 | 90.9 | | | | |
| | F | 82.9 | 89.5 | | | | |
| RA37111-1 | A | 90.2 | 92.8 | | | | |
| | B | 88.1 | 91.2 | | | | |
| | C | 78.8 | 83.1 | | | | |
| | D | 71.0 | 75.7 | | | | |
| | E | 83.3 | 87.6 | | | | |
| | F | 74.6 | 79.1 | | | | |

PERCENT OF CORRECT RESPONSES FOR NATION AND MODAL GRADE BY AGE
1981-82 MATHEMATICS ASSESSMENT (Cont'd.)

| | | Age 9 | | Age 13 | | Age 17 | |
|---|---|---|---|---|---|---|---|
| | | National | Grade 4 | National | Grade 8 | National | Grade 11 |
| RA42241-2,3 | | | | 17.2 | 18.4 | 29.1 | 29.1 |
| RA42832-2,3 | A | | | 73.0 | 79.8 | 89.4 | 90.4 |
| | B | | | 66.5 | 76.5 | 86.5 | 88.2 |
| | C | | | 56.8 | 67.4 | 80.3 | 82.1 |
| RA44621-2 | A | | | 41.7 | 47.6 | | |
| | B | | | 28.2 | 31.5 | | |
| | C | | | 25.1 | 27.7 | | |
| RA46232-2,3 | | | | 70.1 | 72.9 | 81.4 | 83.0 |
| RA47344-2,3 | | | | 14.0 | 18.0 | 44.0 | 46.8 |
| RA47344K2,3 | | | | 14.4 | 17.5 | 51.9 | 54.8 |
| RA47711-1 | A | 70.0 | 81.8 | | | | |
| | B | 49.2 | 64.9 | | | | |
| | C | 78.9 | 90.6 | | | | |
| | D | 63.3 | 78.7 | | | | |
| | E | 79.1 | 89.1 | | | | |
| | F | 55.6 | 71.8 | | | | |
| RA47832-1 | | 73.4 | 80.9 | | | | |
| RA48221-2 | | | | 23.9 | 28.4 | | |
| RA48221K2 | | | | 7.1 | 8.8 | | |
| RA51932-2,3 | | | | 62.2 | 68.5 | 82.3 | 86.5 |
| RA52132-2,3 | | | | 11.2 | 13.4 | 27.2 | 28.9 |
| RA61132-2,3 | A | | | 58.0 | 62.9 | 77.7 | 80.6 |
| | B | | | 43.6 | 47.5 | 66.6 | 70.1 |
| | C | | | 39.5 | 44.7 | 65.8 | 68.6 |
| | D | | | 26.7 | 28.1 | 46.8 | 49.0 |
| RA70443-1 | | 35.0 | 43.2 | | | | |
| RA71443-2,3 | | | | 30.7 | 34.4 | 43.6 | 44.3 |
| RA72043-1,2 | | 57.1 | 59.2 | 66.7 | 69.3 | | |
| RA80944-1,2 | | 19.1 | 19.7 | 56.7 | 61.8 | | |
| RA81042-2,3 | | | | 36.2 | 42.8 | 60.0 | 65.3 |
| RA90144-3 | A | | | | | 85.9 | 87.5 |
| | B | | | | | 93.8 | 94.6 |
| RA91944-3 | | | | | | 57.2 | 59.4 |
| RA94123-2,3 | A | | | 52.1 | 59.3 | 75.0 | 79.8 |
| | B | | | 57.1 | 64.2 | 77.5 | 81.1 |
| | C | | | 6.5 | 7.8 | 21.1 | 23.0 |
| | D | | | 53.8 | 60.7 | 76.0 | 80.4 |
| | E | | | 52.7 | 59.5 | 74.4 | 78.3 |
| RB10211-3 | | | | | | 50.6 | 54.4 |
| RB22325-3 | | | | | | 24.8 | 28.2 |
| RB23025-2,3 | | | | 62.2 | 69.2 | 80.9 | 84.4 |
| RB25142-3 | | | | | | 5.7 | 5.7 |
| RB25625-2 | | | | 54.1 | 60.7 | | |
| RB30125-3 | A | | | | | 54.2 | 58.9 |
| | B | | | | | 19.5 | 21.6 |
| RB40847-2 | | | | 26.1 | 29.2 | | |
| RB40932-3 | | | | | | 27.9 | 29.8 |

PERCENT OF CORRECT RESPONSES FOR NATION AND MODAL GRADE BY AGE
1981-82 MATHEMATICS ASSESSMENT (cont'd.)

| | | Age 9 | | Age 13 | | Age 17 | |
|---|---|---|---|---|---|---|---|
| | | National | Grade 4 | National | Grade 8 | National | Grade 11 |
| RB41832-3 | | | | | | 44.4 | 47.3 |
| RB51223-3 | | | | | | 22.7 | 25.4 |
| RB70246-2 | A | | | 77.8 | 79.1 | | |
| | B | | | 93.0 | 94.4 | | |
| RC10411-2 | A | | | 46.0 | 50.0 | | |
| | B | | | 53.8 | 57.3 | | |
| RC12611-1 | | 48.5 | 54.3 | | | | |
| RC20432-1,2,3 | | 58.0 | 62.9 | 82.2 | 83.7 | 82.2 | 84.2 |
| RC20932-2,3 | | | | 9.4 | 9.8 | 22.4 | 24.4 |
| RC40542-2,3 | | | | 20.0 | 21.8 | 39.0 | 41.1 |
| RC41111-3 | | | | | | 36.9 | 37.3 |
| RC60824-3 | | | | | | 16.3 | 19.0 |
| RC71224-2,3 | | | | 49.5 | 53.8 | 66.5 | 68.3 |
| RC80442-2,3 | | | | 14.6 | 16.8 | 25.5 | 27.3 |
| RC81143-2,3 | | | | 20.5 | 18.8 | 27.7 | 28.2 |
| RC82132-2,3 | | | | 9.6 | 10.3 | 43.6 | 47.4 |
| RD11211-2,3 | A | | | 47.2 | 49.1 | 49.8 | 51.4 |
| | B | | | 59.6 | 63.3 | 73.8 | 74.9 |
| | C | | | 61.7 | 67.5 | 71.1 | 73.3 |
| | D | | | 58.6 | 62.1 | 66.4 | 69.0 |
| | E | | | 84.2 | 87.7 | 90.3 | 91.9 |
| RD21422-1 | A | 94.3 | 95.9 | | | | |
| | B | 90.1 | 94.6 | | | | |
| | C | 77.0 | 83.0 | | | | |
| RD21722-1 | | 40.3 | 46.5 | | | | |
| RD30122-1,2 | | 63.7 | 65.6 | 74.5 | 78.2 | | |
| RD40722-3 | | | | | | 19.2 | 20.5 |
| RD50432-2,3 | | | | 81.8 | 85.2 | 84.8 | 86.9 |
| RD70232-3 | | | | | | 59.3 | 61.8 |
| RD90141-1,2,3 | | 35.6 | 41.2 | 78.6 | 82.6 | 89.0 | 91.4 |
| RD91242-3 | | | | | | 22.9 | 25.3 |
| RD91342-2,3 | | | | 9.8 | 12.1 | 35.6 | 37.5 |
| RD91342R2,3 | | | | 8.2 | 10.7 | 36.0 | 39.2 |
| RD92141-2,3 | | | | 38.2 | 38.5 | 41.3 | 42.5 |
| RE10543-2,3 | | | | 4.3 | 4.4 | 11.8 | 12.8 |
| RE11246-1,2 | | 49.5 | 53.3 | 81.0 | 85.2 | | |
| RE11532-1,2 | A | 24.0 | 26.8 | 64.7 | 69.2 | | |
| | B | 56.4 | 59.8 | 84.0 | 86.9 | | |
| | C | 38.5 | 41.8 | 74.5 | 79.1 | | |
| RE12646-2,3 | A | | | 90.1 | 92.3 | 91.3 | 91.8 |
| | B | | | 24.9 | 23.2 | 29.2 | 30.6 |
| RE21041-1,2,3 | | 24.9 | 30.2 | 75.5 | 80.4 | 80.0 | 82.7 |
| RE30323-1,2,3 | A | 75.9 | 83.8 | 95.5 | 98.1 | 98.3 | 98.6 |
| | B | 68.9 | 77.4 | 93.5 | 96.6 | 96.5 | 97.0 |
| | C | 41.6 | 49.4 | 80.7 | 85.6 | 90.8 | 92.7 |
| RE32723-3 | | | | | | 43.4 | 44.1 |